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SOAP

JUNE
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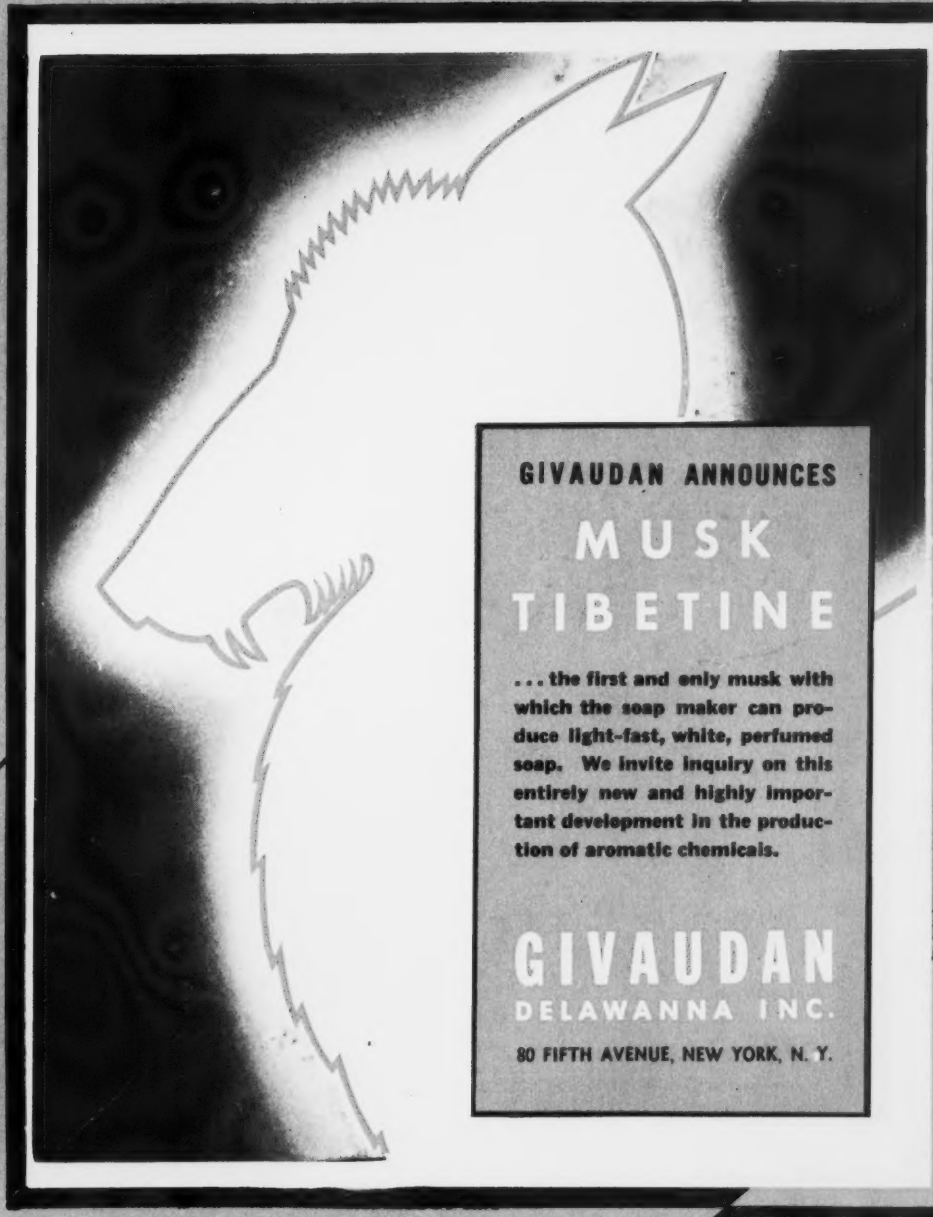
SOAPS
INSECTICIDES
DISINFECTANTS
CHEMICAL SPECIALTIES
SANITARY SUPPLIES
POLISHES
CLEANERS


GIVAUDAN ANNOUNCES
MUSK
TIBETINE
... the first and only musk with which the soap maker can produce light-fast, white, perfumed soap. We invite inquiry on this entirely new and highly important development in the production of aromatic chemicals.
GIVAUDAN
DELAWANNA INC.
80 FIFTH AVENUE, NEW YORK, N. Y.

by—

CHUIT, NAEF & CIE.

Geneva : : : Switzerland

DESCRIBED by several of the industry's most capable perfumers and cosmetic chemists as *"the best Lily of the Valley odor yet,"* MUGANTHEME Naef is a new and especially delightful version of a Muguet base.

MUGANTHEME is truly the universal Lily—for it can be used with most pleasing effects and equally good results in high grade toilet soaps, creams, powders and lotions.

THE current popularity of floral type odors marks the introduction of MUGANTHEME by Chuit, Naef now as particularly timely.

$17.50 per pound

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From the original Fuld formula. A powerful insecticide with spectacular kill against flies and which most perfectly solves household insect problems.

Other insecticides cover every phase of modern insect extermination.

Fuld "Thirty-Sixer" Likes The New Diggin's

Why wouldn't he like it? His OWN ground. His OWN label. His OWN PRICES. His OWN REPEAT SALES and PROFITS! Why not dig up the extra "pay-dirt" that lies under your OWN LABEL on the complete Fuld line—America's fastest moving line of Sanitary Chemicals?

WHAT FULD MAKES for the LEADERS

LIQUID CLEANERS
- Pine Scrub Soap
- Liquid Scrubbing Compound
- Sassafras Scrub Soap
- Floor Bleach
- Rug Shampoo

INSECTICIDES
- Roach Powders
- Fly Sprays
- Cattle Sprays
- Pyrethrum Sprays
- Moth Spray
- Rat Exterminators
- Sprays for Special Purpose
- Concentrates

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- Self-Polishing Wax
- Liquid Wax
- Wood Seal
- Gym Seal
- Terrazzo Seal
- Wax-Var
- Paste Wax
- Dance Floor Wax

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- Wall Containers
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- Window Cleaner
- Scouring Compounds
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- Forma Chloro Sprays
- Theatre Sprays
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- Tile & Enamel Cleaners
- Boiler Compounds

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- Urinal Blocks
- Deodorant Blocks 2 to 40 oz. sizes
- Deodorant Crystals

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BALTIMORE. MARYLAND

THIS SOAP'S JUST RIGHT
FOR ME—
IT SMELLS SO CLEAN
AND REFRESHING
DU PONT
AROMATICS
Quality Aromatics
to meet every need of the
Soap Manufacturer
E. I. DU PONT DE NEMOURS & CO., INC.
ORGANIC CHEMICALS DEPARTMENT
FINE CHEMICALS DIVISION
WILMINGTON, DELAWARE

SOAP

Volume XII
Number 6

June, 1936

SANITARY Products Section, which is included as a department of every issue of SOAP, begins on page 75. Production Section begins on page 63.

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FIRST, you need dependable silicate of soda, and next you ask, "When can I have it?" Ample manufacturing and distributing facilities insure your getting deliveries of P. Q. Silicate of Soda on time, saving you worry and costly delay.

Eight P. Q. plants east of the Rockies make nothing but silicate of soda, and distributors are located in sixty-five cities.

Tank car, drum or ten-gallon pail—no matter what quantity or kind of silicate, you can rely on P. Q. Silicate Headquarters supplying it promptly. Feel free to consult us about a problem or an order.

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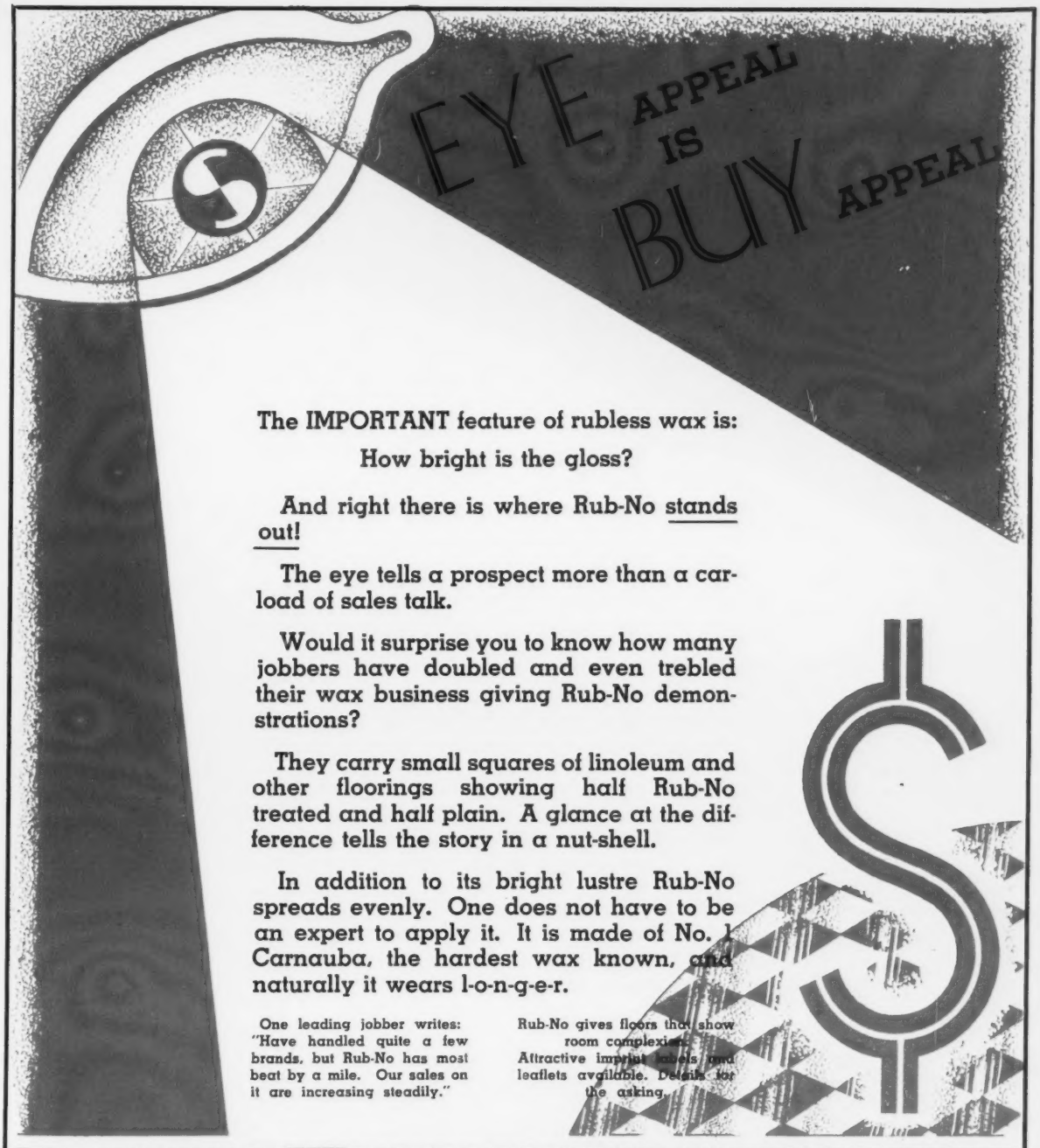
***General Offices and Laboratory*: 125 S. Third St., Philadelphia, Pa. Chicago Sales Office: Engineering Building. Stocks in 65 cities. Sold in Canada by NATIONAL SILICATES LTD., Toronto, Ontario.**

DO THE JOB BETTER OR AT LOWER COST



The IMPORTANT feature of rubless wax is:

How bright is the gloss?

And right there is where Rub-No stands out!

The eye tells a prospect more than a carload of sales talk.

Would it surprise you to know how many jobbers have doubled and even trebled their wax business giving Rub-No demonstrations?

They carry small squares of linoleum and other floorings showing half Rub-No treated and half plain. A glance at the difference tells the story in a nut-shell.

In addition to its bright lustre Rub-No spreads evenly. One does not have to be an expert to apply it. It is made of No. 1 Carnauba, the hardest wax known, and naturally it wears l-o-n-g-e-r.

One leading jobber writes: "Have handled quite a few brands, but Rub-No has most beat by a mile. Our sales on it are increasing steadily."

Rub-No gives floors that show room complexion. Attractive imprint labels and leaflets available. Details for the asking.

CLIFTON CHEMICAL COMPANY

246 FRONT STREET, NEW YORK CITY

TEAR OFF HERE

CLIFTON CHEMICAL CO., 246 Front St., New York City.

Rub-No sounds interesting. Without obligation send details regarding Rub-No, as well as on other items checked.

- ☐ Liquid Soaps
- ☐ Liquid Soap Bases
- ☐ Dispensers
- ☐ Disinfectants
- ☐ Floor Scrub
- ☐ Deodorizing Cakes
- ☐ Deodorizing Blocks
- ☐ Wall Containers
- ☐ Metal Polish
- ☐ Mopping Varnish
- ☐ Furniture Cream
- ☐ Insect Killer
- ☐ Theatre Spray
- ☐ Spot Remover
- ☐ Shampoos

NAME .....

ADDRESS .....

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Another AROMATIC PRODUCT that is no mere blended Lavender but a prime standard synthetic offering the true odor value of Oil of Lavender.

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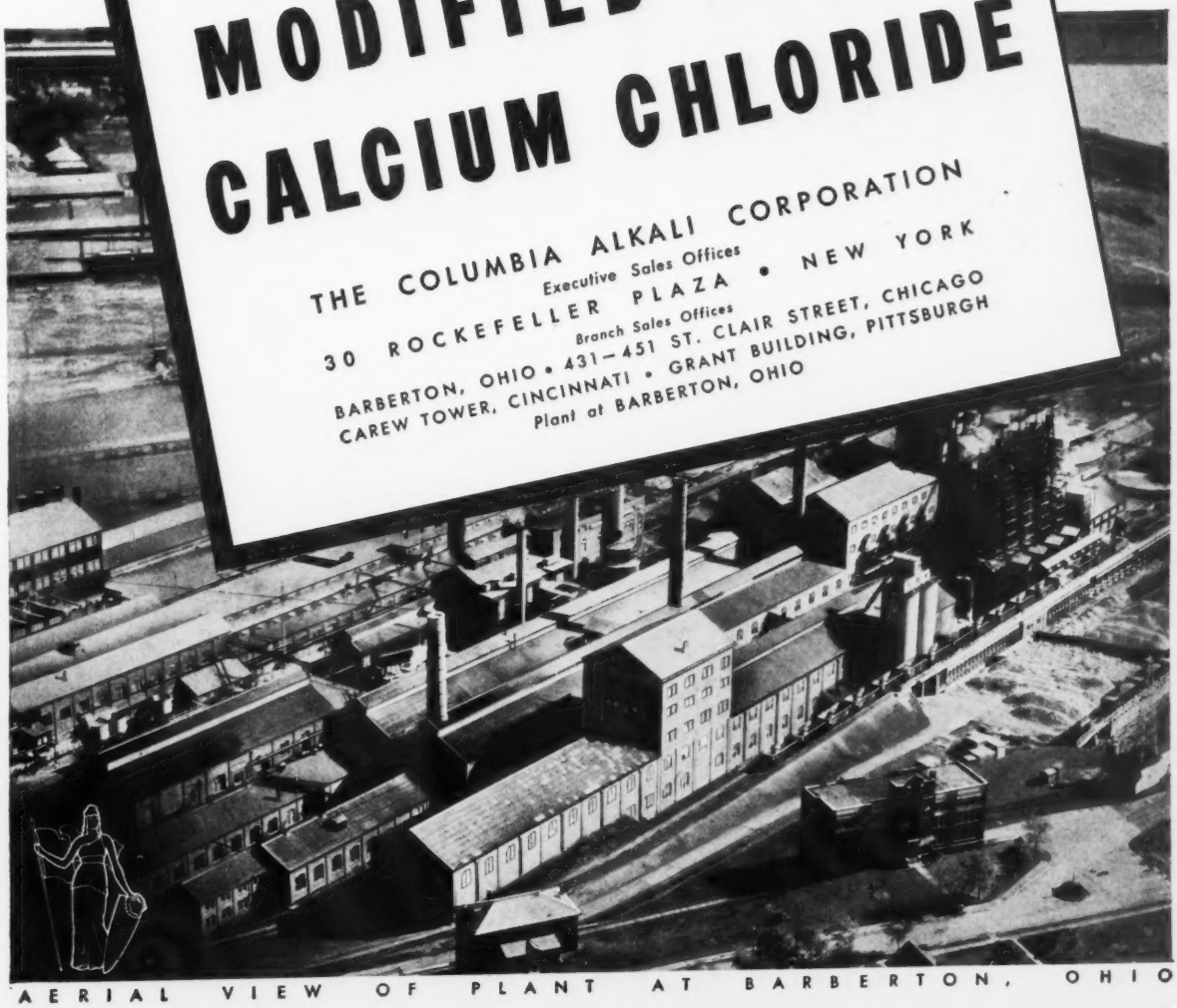
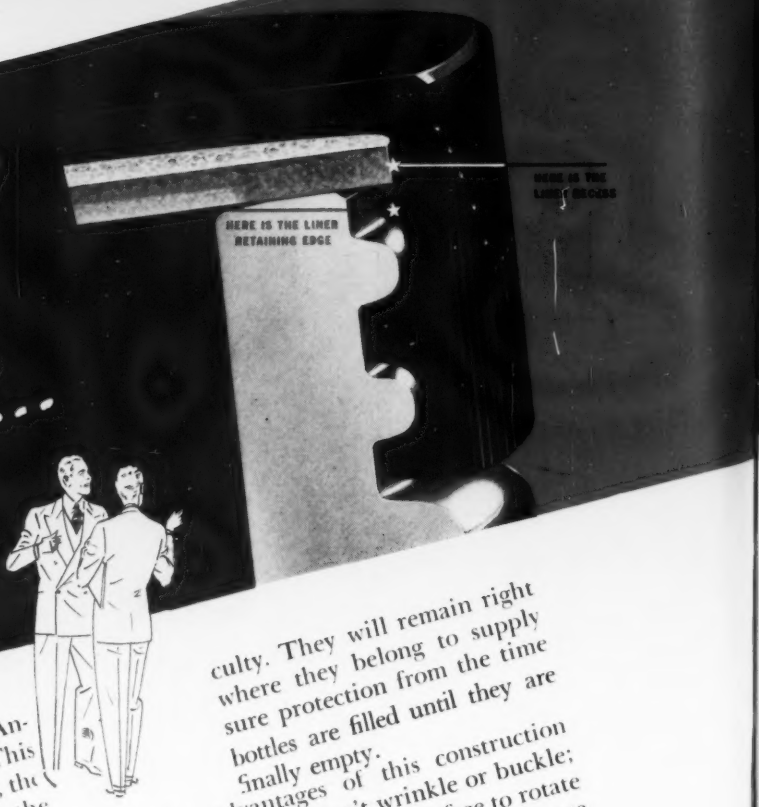
CAREW TOWER, CINCINNATI • GRANT BUILDING, PITTSBURGH

Plant at BARBERTON, OHIO



AERIAL VIEW OF PLANT AT BARBERTON, OHIO

Liner Retaining Ledge" sounds pretty technical... do I need it?



ANYONE who uses molded caps needs Anchor's great liner retaining features. This exclusive patented type of construction, the *liner retaining ledge* and *liner recess* on the inside of each Anchor Molded Cap, gives the packager an extra measure of protection obtainable in no other way. Whether a manufacturer realizes it or not, it is the tight, even contact between the liner and the top edge of the glass container that protects the product and makes a package leak-proof, evaporation-proof and convenient for the user.

Anchor's liner retaining features hold liners securely in place, flat in the top of the caps, and at the same time free to rotate. As a result, liners cannot fall out and become missing en route from us to you; nor when tumbled about in the hoppers of the automatic capping machines. There is no need for inspecting caps to assure the presence of liners as bottles are being capped. And when packages are opened, liners won't stick to the bottle tops; they won't be discarded nor cause consumers any difficulty. They will remain right where they belong to supply sure protection from the time bottles are filled until they are finally empty.

Other advantages of this construction are: (a) a flat liner can't wrinkle or buckle; (b) the surface of a liner that's free to rotate won't get cut or scratched as caps are applied and removed; (c) there's no need for adhesives that might introduce foreign odors or flavors; (d) the use of oversized liners, forced into the caps, is unnecessary.

May we send you our descriptive booklet entitled "Anchor Molded Caps" which explains all their features in detail? ANCHOR CAP & CLOSURE CORPORATION, Long Island City, New York; Toronto, Canada. *Branch offices in all principal cities.*

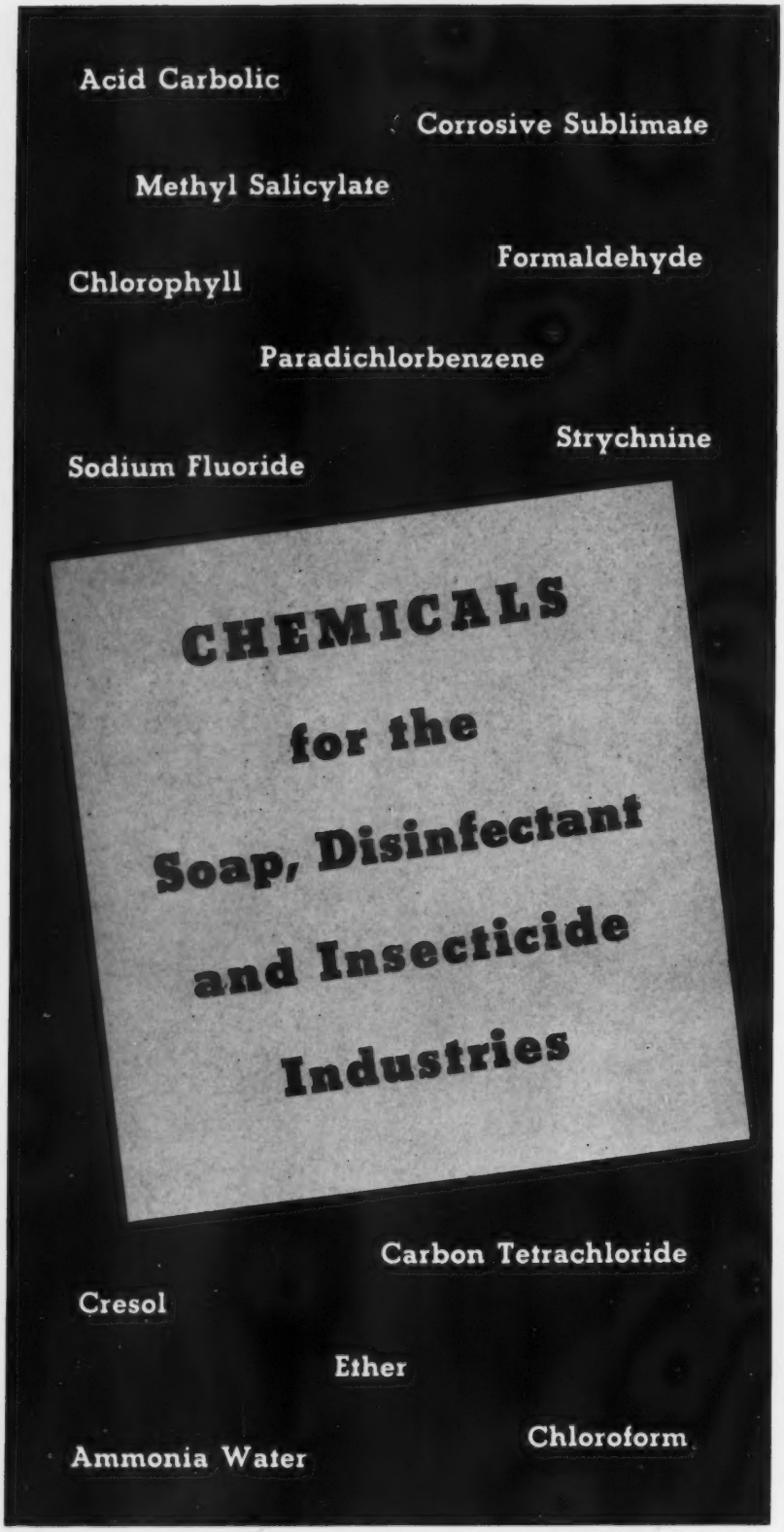
Caps by ANCHOR

THE *Long* AND *Short* OF IT

WHILE SALEM glassware varies even more widely than the two sample containers illustrated—in size, in shape, in design and in the purpose for which they are intended to be used—the long and short of the matter is that they are all members of one big family of containers, akin in quality and possessing the attributes of fine, well-made glassware. All are characterized by clarity, brilliance and clean color; all are strong and sturdy to withstand the bumps and knocks of filling, shipping and handling; all are uniform in capacity and accurate in finish; and [illegible] *electric annealed.*

But the greatest assurance to buyers of glassware is the fact that the name of Salem has over a long period of years always stood for dependability, good glassware and good service. Let us know your needs and we will gladly submit appropriate samples. SALEM GLASS WORKS, Salem, New Jersey. *Associated with* CAPSTAN GLASS COMPANY, Connellsville, Pennsylvania. *Branch offices in all principal cities.*

CAPSTAN *Glass*



Perhaps you never realized it before, but the same laboratory that tests the prescription chemicals which are dispensed by thousands of pharmacists, is the same laboratory that controls the quality of Merck Chemicals for the Soap, Disinfectant and Insecticide Industries.

Here you have evidence establishing the fine quality of these Merck products. The rigid laboratory tests to which all materials are subjected insure uniform quality of the finished products.

Standardize your processes with Merck Chemicals, at no additional cost. You will find it is to your advantage to do so.

★ MERCK & CO. Inc. *Manufacturing Chemists* RAHWAY, N. J. ★

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WATER SOLUBLE PERFUME OILS

FELTON Aquaromes impart pleasant, lasting fragrance to all kinds of products in which water is used as a base . . . shampoos, liquid soaps, deodorant sprays and many others.

They are completely soluble . . . and will not produce sediment, oil film or cloudiness.

AQUAROMES are available in any fragrance! PRICED FROM $1 to $6 per lb.

▼ ▼ ▼

We invite you to try AQUAROMES in your product and will be pleased to submit working samples!

FELTON CHEMICAL COMPANY

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603 JOHNSON AVENUE, BROOKLYN, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL ISOLATES, PERFUME OILS, ARTIFICIAL FLOWER AND FLAVOR OILS

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IF you have a problem regarding the use of Caustic Potash or Caustic Soda, why not turn it over to the most experienced hands? What may be a problem to you, may be no trouble at all to men who know these products inside and out, from test-tube to drum —as the result of long and valuable producing and servicing experience. We are old hands at getting to the heart of the matter whenever and wherever these products are concerned. And you'll find us responding to your calls with a cheerful, friendly spirit that means to say, "Certainly—no trouble at all!"

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9 EAST 41ST STREET, NEW YORK, N. Y.

Associated with Electro Bleaching Gas Co.
Pioneer Manufacturer of Liquid Chlorine

LABORATORY CONTROL

assures
uniform
quality of

DAVIES-YOUNG PRODUCTS

NOW a complete line of sanitary supplies sold thru jobbers only

DISINFECTANTS • INSECTICIDES • DEODORANT BLOCKS • POLISHES • WAXES • GYM FINISH • FLOOR SEAL • OIL SOAPS LIQUID SOAPS • COCONUT BASE SOAPS

THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO

A NEW STEP IN POWDER FILLING

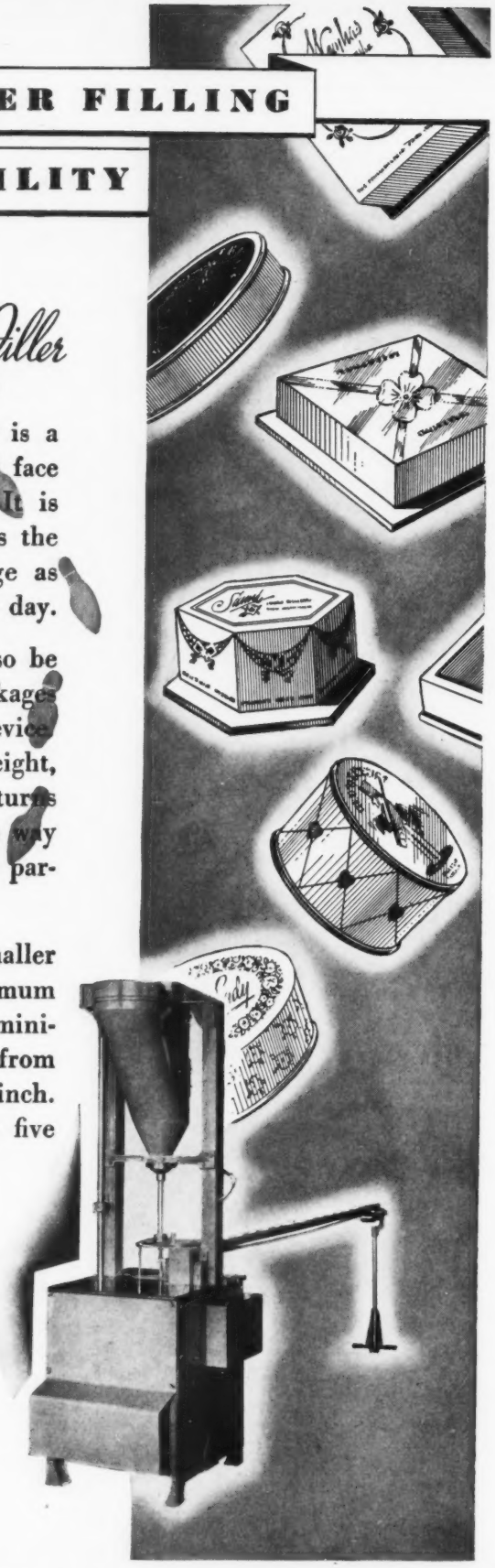
ECONOMY AND VERSATILITY

Take the next step . . . .
Investigate the S&S Rotary Powder Filler

THE S&S Rotary Powder Filler is a speedy, accurate unit designed for filling face powder drums, small cans or canisters. It is dustless in operation. A conveyor removes the packages. One operator should average as many as 20,000 packages in an eight-hour day.

But that is not all. This same unit may also be used as a moderate-speed filler for larger packages with the simple removal of the rotary device. It may then be adjusted to fill by gross weight, by packing, volume or auger, using the turns of the auger as a measuring device. In this way the method of filling best suited to any particular package may be chosen.

With the rotary device attached, for smaller packages, the packages may have a maximum diameter, or width, of three inches and a minimum of one inch. The height may vary from two-and-three-quarter inches to one-quarter inch. Used for larger packages, weights up to five pounds may be accommodated.



A sample package of your product will bring you a definite guarantee of the speed and accuracy of the S&S Rotary Filler for your particular work. Send it today.

STOKES & SMITH Co

PACKAGING MACHINERY PAPER BOX MACHINERY
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STANDARD SILICATE of SODA-

Precise laboratory control makes it, keeps it uniformly exact to specifications

"STANDARD" *Always a good silicate specification..*

In other words, you have only to tell us the characteristics required of Silicate of Soda in your process (or let us help you to determine them). Then sit back and enjoy life, with the assurance that every shipment of "Standard" will be uniformly correct in all details, and dependably prompt in delivery as well. *That's "Standard" service . . .* backed by the facilities and experience of four modern, convenient plants, a capable technical staff, and a national hook-up of warehouse distributors.

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Just Published — SEND FOR IT!

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PART III

PROPERTIES OF CAUSTIC SODA AND ITS AQUEOUS SOLUTIONS

Physical constants – Densities and caustic content of caustic solutions – How to dilute caustic solutions – Specific gravity and Baume, at different temperatures – Converting °C. to °F. – Heat of dilution – Solubility of caustic in water – Freezing points and boiling points of caustic solutions.

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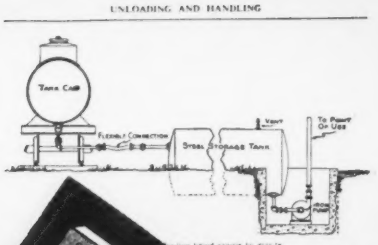

...ing liquid caustic by gravity

...nol formaldehyde type and hard ...tic and are not suitable for ...

...ervice at tempera-

Cutting Costs with Liquid Caustic Soda

FREE TO PLANT EXECUTIVES AND TECHNICAL MEN

The Table of Contents page, reproduced above, gives an idea of how comprehensive is the data in this new 72-page handbook.

HERE'S a real handbook on liquid caustic soda, packed full of useful information for both present and potential consumers. Its 72 pages contain material of practical value to the entire plant organization — executives, buyers, chemists, operating men—based upon the wide experience of the Mathieson technical staff and upon data gathered from authoritative reference sources. Anyone interested in the use of liquid caustic soda may obtain this book without obligation by writing to us on his business letterhead.

Send today for your copy of "Cutting Costs with Liquid Caustic Soda."

The MATHIESON ALKALI WORKS (Inc.), 60 East 42nd St., New York, N. Y.

Short Cuts to PERFUMING ECONOMIES

Substitute

WITHOUT SACRIFICE

When a substitute saves you money that's Not News . . . but when a substitute saves you money without sacrificing quality—THAT'S NEWS . . . *very good news.*

To users of Oil Sassafras Artificial we suggest the replacement of PERFUME OIL 413 to effect production economies. It has a clean fragrance and imparts a residual odor like that of Safrol.

For the most efficient method of using this new specialty let us know your particular requirements, or send for a 4 oz. testing sample.

Perfume Oil 413

An *Inexpensive* Substitute for Expensive Oil Sassafras Artificial

An *Efficient* SUBSTITUTE *for* OIL CITRONELLA

Andro M M & R is equal in pungency to the best citronella oil. It fluctuates neither in price, quality or strength. It is light in color, (almost water white) and does not have the tendency to darken in finished soaps, sprays or other products.

This excellent product of the M M & R laboratories is worth immediate investigation.

ANDRO M M & R
Efficient Substitute
for
OIL CITRONELLA

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QUALITY ESSENTIAL OILS, BALSAMS, AROMATIC CHEMICALS, BASIC PERFUMES, FLAVORING MATERIALS . . . SINCE 1895

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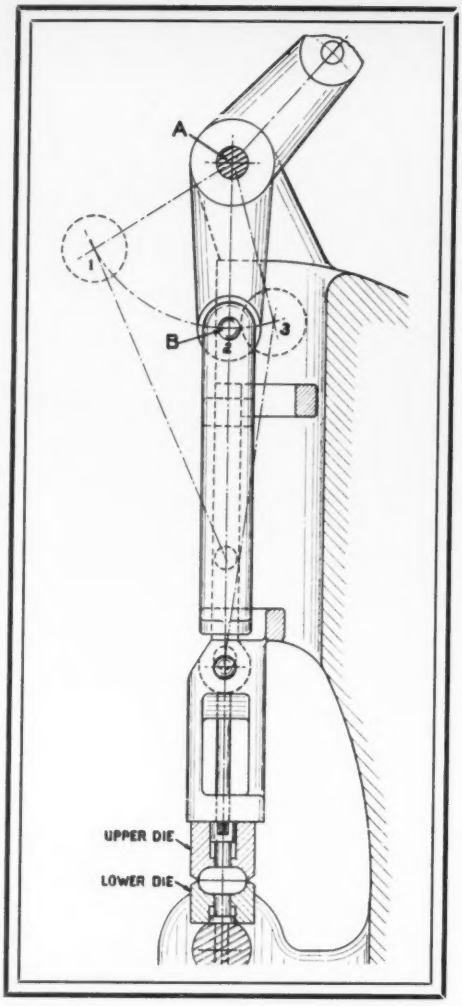
OFFICES IN PRINCIPAL CITIES

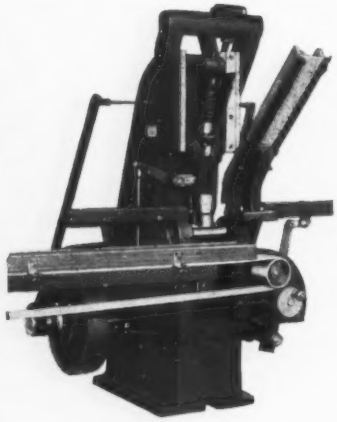
NO MORE BATTERED DIES

Note on our sketch that the upper die is at its extreme lowest pressing position when the centers A and B of the pressing toggle lever are in vertical alignment, and that any further motion of center B in either direction along the arc lifts the upper die away from the lower. Even a set of knife-edged dies (see position 2) cannot be marred as a result of over travel, as happens on older models.

This is one of many features that make the new Pin Die press the world's standard, and why perfect pin die cakes are produced by it, without halts for repairing dies.

SAVE TIME, ECONOMIZE ON DIES AND PRODUCE FAR BETTER LOOKING CAKES BY INSTALLING A





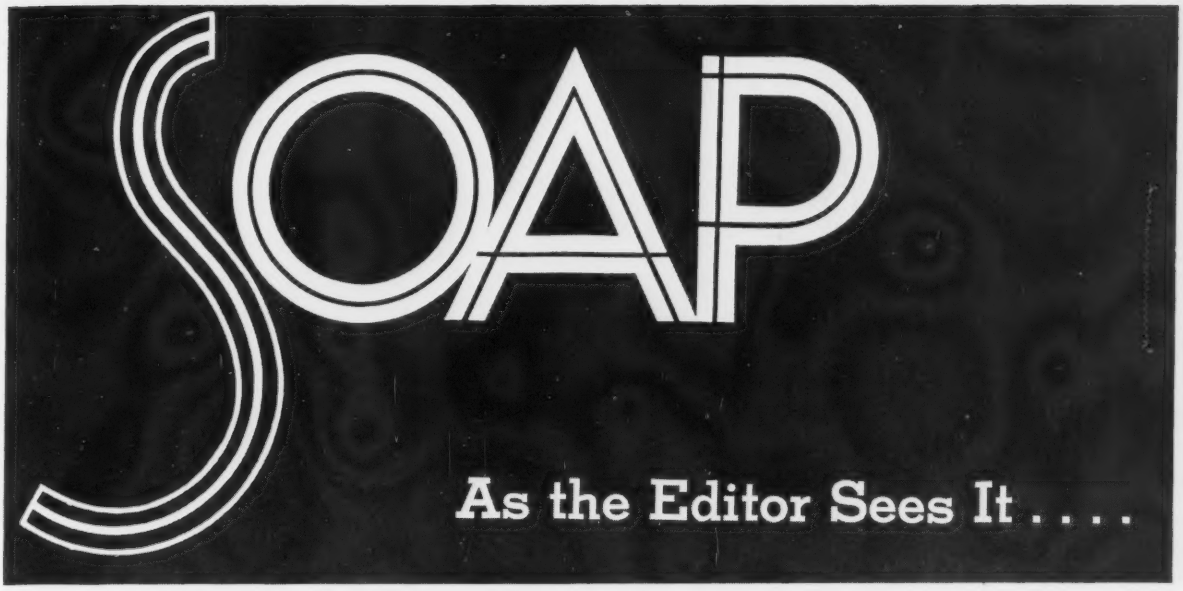
TYPE G

Toggle Operated
Press for Pin Die Work

JONES PIN DIE PRESS

R. A. Jones & Company, Incorporated
P. O. Box 485 Cincinnati, Ohio

We make presses for all shapes, sizes and varieties of toilet and laundry soap.



AMONG other things at a meeting of soap manufacturers held in Chicago a month or so ago, S. Bayard Colgate, president of the Association of American Soap & Glycerine Producers, had the following to say: "As to problems that confront our industry, I doubt that anyone feels that today's profit system in soap manufacturing is satisfactory; or that soap consumption has advanced as it should; . . . or that the industry has developed all the cooperation that it can; or that we should do nothing when legislative proposals come up, as they do almost every month, to levy upon our products taxes, regulations, and other burdens that we believe to be ill-conceived, unnecessary, and not in the public interest."

We should like to see these words chiseled upon the front doorstep of every soap maker in the country, especially upon the doorsteps of those who, when new taxes, or new regulations, federal, state, or local, are proposed, do nothing, but leave it for the other fellow to do. And for those who refuse to meet and consult with their competitors, but who complain of lost business and lost profits, and refuse to act with the industry as a whole to remove the underlying causes of retarded consumption and unsatisfactory profits, the same applies. Also, those soapers who refuse to play their part in the unit activities of the industry expressing a smug ". . . we are perfectly satisfied with conditions,"—and who will not lend a hand or a dollar to the cause of increasing soap consumption, or to removing the causes behind the present unsatisfactory profit system,—may find that conditions change. There is not a valid reason why any soaper, no matter how small, should today hold aloof from the cooperative activities of the industry through its trade association.

A RENDERER wants to know if the soap industry is making its soap out of air. This must be the case, he points out inasmuch as the soapers have just about quit buying tallow and grease during the past month or so. During that time, the price of tallow has dropped off more than a cent and greases correspondingly. There has been little or no competition from foreign tallow, but nevertheless, stocks in the hands of American producers have become uncomfortably large. And the stocks in soapers tanks are also reputed to be none too small. It is these stocks now going to the kettle which cost soapmakers some six cents per pound, while the current market hovers in the vicinity of four-and-a-half cents.

That an absence of buying is wholly responsible for the drop in tallow and grease prices is obvious. The price of tallow has moved down to where it is about two cents under tax-paid coconut oil figures. With talk of processing taxes on imported tallows being heard quite frequently in Washington, the present situation, we should think, would tend to encourage their

adoption. That producers of tallow are distinctly unhappy over the present situation after the markets of the past two years, goes without saying.

THE excise tax on coconut oil, and the payment of the proceeds to the treasury of the Philippine Commonwealth, are altogether constitutional, according to the ruling of the District of Columbia Supreme Court in the Haskins Brothers case. Although the court issued the original injunction against payment of the money to the Philippines, it answers the whole question, following the filing of an amended bill of complaint by the soap firm, by upholding the constitutionality of the law. Even if the decision of the District of Columbia Court had been exactly the reverse, the soap industry would still have to await adjudication of this tax by the United States Supreme Court before knowing with any certainty just where it stands. We still await the decision of the high court which will probably be handed down some time next fall,—but we await it with none too much optimism as far as the removal of the tax is concerned.

BEFORE a recent meeting of the American Chemical Society in Kansas City, soya bean oil was recommended for the manufacture of soft soaps, especially automobile soap. It was also suggested that soya bean oil could be substituted in part for coconut oil and palm kernel oil in ordinary soaps, especially hydrogenated soya bean oil. The object of these suggestions for a wider use of soya bean oil in soap was evidently to encourage greater consumption of a domestic oil in preference to two which are imported. As far as soft soap is concerned, the recommendation of soya bean oil is wholly sound. In fact, when the price is right, the soap industry uses all the bean oil it can get in its oil soaps. This is nothing new. Potash soap manufacturers have been using it for twenty years or more.

When it comes to using soya bean oil in hard soaps, toilet or laundry, that is another matter. This oil gives a soap which is soft and generally unsatisfactory physically. The fact that when it can be purchased at lower prices than coconut oil or other hard soap fats, that it has not been used for this purpose, is the best evidence that it is not suitable. When it is hardened by hydrogenation, the resulting soap has the usual lack of lathering power. Any substitution of hydrogenated bean oil for coconut oil, therefore, means a corresponding loss of lather. And there are other drawbacks which soapers do not like.

The wide publicity received by this address on soya bean oil in soap making at the Chemical Society meeting may give a wrong impression to the public. Especially in the farm districts, it may give rise to the thought that American soapers are deliberately using foreign oils in preference to suitable domestic oils and fats, and the accompanying thought that the soaper is the arch-enemy of the farmer. This latter opinion has unquestionably been fostered by certain lobby interests in Washington as legislative window dressing. Now to complete the picture, some harebrained congressman might introduce a bill to require that soya bean oil be used in part in all American-made soap, meanwhile crying aloud that this is vital to save our struggling soya bean farmers from starvation.

EVERY pound of laundry chip soap sold today means a loss to the manufacturer. Not only today, but for some time past, soap makers have been losing money on tallow chip, according to a manufacturer who has studied the market for years. Asked for details and reasons, he stated that in his opinion the desire of too many soap makers to maintain and expand their tonnage in the face of competition is responsible for too low a price. He held that although manufacturers have come to class tallow chip as a non-profit item, they still make every effort to hold up their tonnage. "We must maintain our position in the market" appears to be the attitude of each firm. However, if this has to be done over long periods at a loss in the hope that conditions may eventually change, we would look upon it as a rather expensive position to maintain. In the present unsatisfactory profit set-up in the soap industry, the same manufacturing and sales efforts directed elsewhere than in tallow chip might mean some improvement in the general situation. For if it be true that every pound of tallow chip is being sold at a loss, one would never suspect it from the manner in which soapers fight for this business.

ROSEMARY

Its cheapness recommends it in soap perfuming—its production and characteristics — also some facts about oil of thyme output.

By Harry J. Monroe

IN APPRAISING the value of perfumes for use in soap, price, odor value, stability, and the reaction of the perfumes with the other constituents of the soap are among the important considerations. According to present market conditions, the least expensive among the essential oils which are eligible from the technical standpoint for successful employment in soapmaking are oil of citronella, which ranges in price from 22c a pound for the Ceylon type to 32c a pound for the Java type; oil of rosemary, which ranges between 30 and 40c a pound for the technical grade; oil of thyme, which may be procured from 58c upward; and oil of origanum, which now sells for from 70 to 75c a pound. All the above-mentioned oils, with the exception of citronella, are important Spanish products.

Its cheapness, its lasting quality, and its refreshing odor make oil of rosemary one of the most desirable essential oils at the disposal of the soapmaker. The oil is distilled from the leaves and twigs of the herd, Rosmarinus officinalus N.O. Labiatae, which grows wild in the part of Europe bordering on the Mediterranean. It is manufactured extensively in Southern France, Spain, and Dalmatia. A small quantity of oil of rosemary is produced in England.

Oil of rosemary is the oldest essential oil of Spain. It is produced in the provinces of Murcia and Albacete in the Southeastern part of the country, and to some extent in the provinces of Granada and Jaen. The rosemary plant grows abundantly in these regions and can be gathered all year round. The distillation is carried on by individual farmers almost exclusively. Very little oil is actually distilled by large organizations. Whenever the routine on the farm slackens down, farmers and farm hands migrate with their families to the mountains in the interior of Spain, far from the towns and villages. Every member of the family chips in to the task of cutting the small rosemary bushes which grow on the sunny hillsides. The work is strenuous and one for which the compensation is very poor. The bushes are then transported to the nearest still. They are carried for hours and hours, along hot tiresome trails, sometimes 10 to 20 miles long, on the backs of donkeys.

The plants, on being brought in from the hillsides to the stills, are weighed, paid for, and stored. The distillation is carried on by peasants, but it is important for these men to be skilled in their art in order to obtain a satisfactory yield of oil. Most of the stills are portable and can be set up wherever a satisfactory water supply is available. The choice of the proper location for the still keeps the cost of distillation down. Two stills are

Weighing the plants before distillation in the mountains of Spain. The whole family helps in the labor.

usually placed near the water supply,—a brook or a spring. The stills are usually sunk in the ground and heated by direct fire, which can be fed by means of a horizontal shaft, cylindrical in shape, which is placed beneath the still and can be reached from the outside. It is important that as small an amount of fuel as possible be used to maintain a fire which is strong enough for the distillation. The only fuel available consists of the exhausted plant material which is dried in the sun.

The spring and summer are the most favorable times of the year to carry on the distillation, and most of the oil is actually distilled during this period. Even though the essential oil is contained only in the leaves, the twigs are also cut up and distilled. Three or four hours are required for one distillation. One still is discharged and recharged while the other is in operation, and the work goes on continually day and night. About six distillations are carried on each day, four men generally handling one still. A yield of about 0.6 to 0.75 per cent of oil is ordinarily obtained from the plants.

It is curious to note how the type of oil varies with climatic and weather conditions and with the region in which the plant is grown. Even at the very same place of distillation, during any particular season, oils possessing different characteristics are obtained. Apart from the natural differences of this type which one finds typical among many such products, the variations may also be taken to be due in part to the lack of scientific control in the distillation procedure itself.

After the oil has been produced, it is handled both by individual farmers and by larger producers, and may be obtained from both for export purposes. The total production of oil of rosemary in Spain is normally between 80 and 100 tons. The oil which is distilled in summer is different from that distilled in winter, and approaches U.S.P. requirements more closely than the winter oil. The latter is less soluble in alcohol and has a different optical rotation. As conditions stand at the present time, Spanish exporters have to make special additions to pure oil of rosemary from Murcia and Albacete to bring up its ester content to the required 2.5 per cent of the U.S.P. Additions to bring about changes in the optical rotation of the oil to meet the U.S.P. requirements are also sometimes necessary. Oils from Jaen and Granada, however, comply with U.S.P. requirements as distilled.

DISTILLATION of oil of rosemary in France is carried on both in make-shift stills and in well-equipped factories. The oil is distilled after the flowers have opened, between June and September, and the entire plant, with the exception of the woody stalk, is distilled. The odor of the French oil is extremely fine and far superior to that of the Spanish oil.

Dalmatian oil of rosemary is obtained from the herbs growing wild over large areas on the islands of Lesina, Lissa, and Solta on the Dalmatian coast. The plants flower from May to June and are clipped at this time. The branches are dried in the sun and the leaves are separated from them by threshing. Only the leaves are distilled. Distillation is for the most part carried on in primitive, fire-heated stills which can be carried from place to place, but recently modern steam-distillation apparatus has been installed on one of the islands. Rosemary oil is distilled on a very small scale in England, but an exceedingly fine oil is produced. It is considerably more expensive than the other types.

The chief constituents of rosemary oil are borneol, camphor, cineol, pinene, and camphene. It is adulterated with all kinds of terpenes, particularly eucalyptus terpenes, and also with steam-distilled pine oil. A more recent and very common and dangerous form of adulteration is practiced in the use of certain fractions of camphor oil. Certain preparations made up of these fractions are imported into Spain and distributed among rosemary oil distillers. These preparations, furthermore, are guaranteed to conform to the letter with various

Pharmacopoeia requirements for rosemary oil. The odor of the camphor fractions blends exceedingly well with the rosemary odor. Rosemary oil is even now sometimes adulterated with turpentine oil. This form of adulteration, however, is quite easily detected by the insolubility of the oil in a definite amount of alcohol and also by a lowering of the specific gravity.

Rosemary oil is mostly used in soaps, but finds employment also in cheap perfumery, eau-de-Cologne, and fly sprays. Its odor is too harsh to permit other uses. Despite its harshness, it is powerful for soap perfuming. It stands up very beautifully in soaps, without requiring the use of fixatives. It is very essential that the pure oil be used in soaps, as results obtained with even slightly adulterated oil of rosemary are nowhere near as satisfactory as results obtained with the absolutely pure oil. Rosemary oil must of course be blended with other oils in soap on account of its harshness. It is never used alone. There are a number of oils, however, which blend very nicely with rosemary and produce very agreeable scents. Among these are lavender, spike, thyme, lemongrass, and others. The amount of rosemary oil used in any mixture depends on the nature of the other oils present and also on individual tastes. The amount of perfume incorporated into any soap amounts in all to 0.2 to 1.0 per cent. There can never be a predominance of oil of rosemary in any perfume compound, as it would not have a pleasant character.

Rosemary oil possesses the advantage over certain other essential oils which are used for soap perfuming in that it does not discolor soaps and may therefore be used for white soaps, as well as for colored ones. The odor of French oil of rosemary has a tendency to fade in soap, while that of the Spanish oil is fairly stable. The odor of Spanish oil tends to turn slightly camphorish. The addition of turpentine as an adulterant in these oils intensifies this characteristic.

THYME oil is produced in Spain under much the same conditions as those which exist for oil of rosemary. It is distilled from various types of thyme plants,—herbs which occur in about forty species. Due to the rapid hybridization of these different species, it is unlikely that any commercial thyme oils are ever distilled from just one type. In Spain the plant grows abundantly on the dry gravelly soil of regions such as Aragon, Andalusia, Catalonia, Murcia and Valencia. As is the case with rosemary, these plants are cut by the peasants and carried over tedious rough paths to the stills. The distillation is carried on day and night. Eight hours are required for the distillation of one charge. The same arrangement of one group working steadily on two charges, as described for rosemary, is followed here. False bottoms are contained in the stills in order for the thyme plants not to come in contact with the boiling water or the fire used to heat the still. The growth of thyme plants also flourishes in the Southern part of France, along the Mediterranean. The plants are gathered when they are in full flower,—during May and June,—and distilled while fresh. The French oils are considered the finest.

There are a number of different types of thyme oil recognized, but those which are met in commercial practice are mainly of two major types: the thymol type and the carvacrol type. The chemical significance of these distinctions is that, in the thymol type, the phenols present in the oil,—which range from 42 to 60 per cent consist mainly of thymol, which is phenol crystallizable, i.e., the phenol can be separated in crystalline form, and only a few per cent of carvacrol, whereas in the carvacrol type, the phenols present in the oil,—which range from 63 to 74 per cent—consist mainly of carvacrol which is

Note: The author acknowledges the courtesy of Dr. Ernest Guenther of Fritzsche Bros., Inc., for the photographs used here which were taken by Dr. Guenther in Spain.

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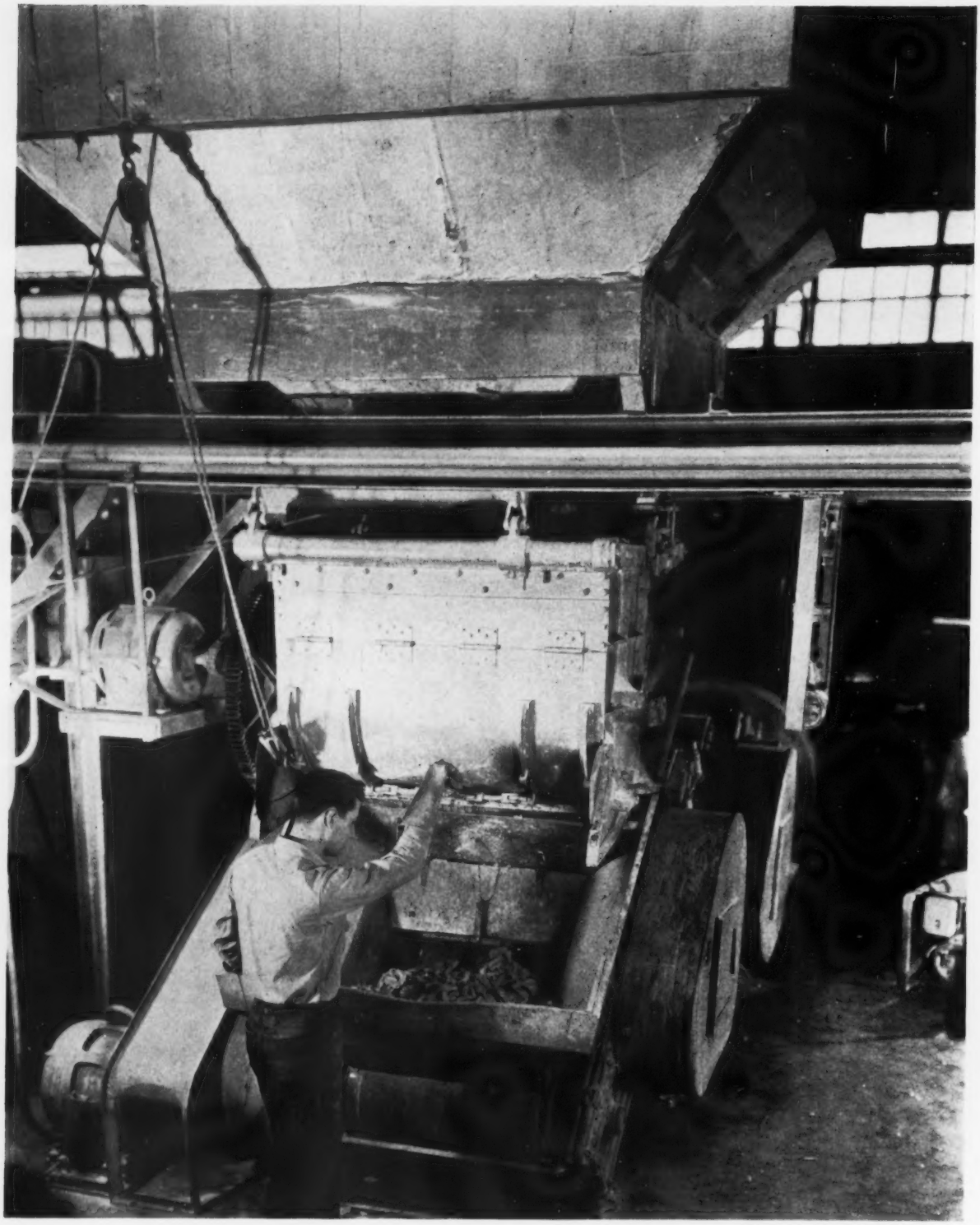
Near a spring or a brook, the direct heated essential oil stills are set up.



In batches of several hundred pounds, flake soap from the storage bin above is weighed out in the amalgamator, and perfume and color mixed in. Dumped into the hopper of the mill, it passes on its way through mills, plodder and press to the wrapping machines.

Milled Toilet Soaps

By C. R. Kemp and Dr. E. G. Thomssen

J. R. Watkins Company

SUCH literature on milled toilet soaps as is found in various books on soap-making, is in general quite brief and does not usually give up-to-date methods. Most of the information on milled toilet soaps is in the minds and in the experiences of the soap-makers actually engaged in carrying out the milling process. For the inexperienced or small manufacturer who desires to mill soaps, there is little accurate or practical information available. It is for this reason that the operations are given here in such detail. Very often this process is referred to as "French Milling," and the soap finished by the process is called "French Milled Soap." This is because the French are given credit for having developed the process.

It may be pointed out that in milling and plodding, a considerable amount of machinery and equipment as well as ability are required in order to produce a well-finished cake of soap. The quality and appearance of the final cake begins with the selection of the raw materials themselves. Unless good quality raw materials are used in the making the soap base, the subsequent efforts will not overcome deficiencies in this regard.

Full-boiled settled soaps consisting of mixtures of tallow and coconut oil are most often used as the soap base from which milled soaps are prepared. It is possible, however, to include in the soap base such oils as bleached palm oil, olive oil or olive oil foots and the better grades of greases. These may be added to the soap in considerable proportions. It is also possible to incorporate semi-boiled or cold-made soaps although this practice is not to be commended.

In describing the milling and plodding of soap, it must first be assumed that a properly-made full-boiled settled soap in flake form has been delivered to the milling department. The moisture content of these flakes should be between 12 per cent and 15 per cent. When the percentage runs below 12 per cent, the soap will have a tendency to be tough and the finished cakes are very apt to have small, hard particles of overdried soap incorporated with them. Once the flake has been dried too thoroughly, it is almost impossible to restore it to a condition that will satisfactorily pass through the mill. On the other hand, if the moisture content is too great, the milling process slows up because the soap on the milling rolls, and the rolls themselves become overheated. Then too, the plodding is difficult and the finished cake is entirely too soft, which makes the cutting and pressing operations even more difficult.

In order to understand the milling and plodding of soap, it is necessary that the machinery and equipment for the mechanical operations be described. A detailed outline of procedure is, therefore, in order.

The first operation consists of weighing up the desired amount of flakes for one lot of soap to be run through the mills. This usually consists of batches varying from 200 to 400 lbs. The ideal arrangement in order to carry out this weighing is to have the flakes stored in a bin above a scale. From the bin the soap chips run directly into the amalgamator. It is advisable, if possible, to have the amalgamator suspended directly from the scale. The amalgamator consists of a mixer, fitted out with stout blades so as to thoroughly disperse other materials which may be added to the soap flakes. These consist of perfume, color, inert material and medicinal additions. If possible the amalgamator should be made of nickel-clad steel or Monel metal, for equipment made of these metals are more easily cleaned and there is less danger of iron contaminating the soap.

The second operation consists of passing the soap mass from the amalgamator through mills. There are two general types of mills in use at present. One is equipped with granite rolls, and the other with chilled iron rolls. There are usually 4 rolls to a mill, although there are mills on the market which have 3 or 5 rolls, and in some cases as high as 10. The mill consists of a heavy iron frame on which the four contiguous rolls are mounted on an upward incline, together with a series of adjustable bearings and a series of pulleys and gears to rotate the rolls. Adjoining rolls rotate in opposite directions, and each roll upward moves more rapidly than the preceding roll so that the soap sheet on the surface of a roll is taken to the faster-revolving roll.

At the feeding end of the mill, there is a hopper, and riding on the top or last roll is a comb-like knife and a solid knife set at different tangents to the roll to strip off the sheet of soap from this last roll in ribbons approximately $\frac{3}{4}$ inches wide. A standard granite roll is about 18 inches in diameter and 30 inches long. This weighs approximately 1,000 lbs. when mounted, and a complete four-roll granite mill weighs about four tons. A close-grained Rhode Island granite is the most suitable stone of which to construct granite rolls. As to the speed of the rolls, numbering them No. 1, 2, 3, and 4 from the bottom to the top, No. 1 should rotate 12.87 R.P.M., No. 2, 20.2 R.P.M., No. 3, 31.8 R.P.M., and No. 4, 50 R.P.M. Mills are on the market in which these speeds are exceeded in

Wet soap ribbons from the chilling roll about to enter the dryer.

order to step up production, but they do not operate quite as satisfactorily as these indicated speeds.

When chilled iron rolls are used, the weight per roll is about 850 lbs. The walls of these rolls are about 2½ inches thick, and they are chilled by means of running water which is usually admitted to the roll through a half-inch perforated pipe running the entire length of the roller. The returned water is discharged through funnel caps at the end of each roll. In small plants where only one mill is used, granite roll mills are recommended instead of the steel mills, as the soap ejected from the amalgamator slips on steel roll mills and the film or ribbon is too thin to make a compact bar in the plodder. The tendency in larger plants, however, is toward the chilled iron rolls. The advantages of iron roll mills are better control of temperature, the soap is milled more thoroughly assuring uniform quality soap for the plodder, and evaporation and deterioration through overheating of the perfume are prevented. In cases where a chilled iron roll mill is used in connection with a 30-inch granite roll mill, it is to be recommended that the iron rolls be 40 inches long. This extra length of the roll takes care of the sheet from the granite roll and prevents the soap from dropping onto the floor.

In addition to the soap mill, a plodder is necessary. In some cases a pre-plodder is used. The object of a plodder is to compress the ribbons or short pieces of soap which come from the mill into a compact mass. This piece of equipment is usually constructed so that the soap, ejected from the mill, is fed into the plodder hopper. The hopper is located directly over a heavy spiral screw very much on the order of an ordinary meat chopper. This screw forces the soap forward toward the compression cylinder at the end of which there is a perforated baffle plate.

During the compression of the soap in the plodder, considerable heat is generated and in order to compensate for this heat, the compression cylinder is jacketed, and through this jacket, cold water is passed. At the end of the cylinder is the nose. This is bolted tightly to the compression cylinder and is hinged on one side so it can swing easily to the left on a heavy hinge when the bolts are loosened. The purpose of this arrangement is to permit the cleaning out of the machine whenever desired. On the end of the nose is the nozzle from which the soap emerges in a continuous bar. Brass plates having various size openings of various shapes are fastened to the end of this nozzle with a screw flange. The shape of the bar is determined by the desired shape of the finished cake of soap. Near the end of the nose, heat is applied by means of a small gas flame or better still an electrical heating unit, in order to polish the soap as it is emitted.

Pre-plodders resemble a plodder, but do not have the nose attached. The soap merely emerges through openings of a round, perforated plate at the end of the cylinder and are broken up by a revolving knife attached to the screw which cuts the soap into small pellets. These pellets can more easily be conveyed to the finishing plodder and in this way increase the capacity of the plodder by avoiding "bridging" of the screw.

Plodders are made either with worm or spur gear drives. The spur gear is more satisfactory than the worm gear as a worm gear is apt to heat up, and is more expensive to operate. The speed of rotation of the screw of the plodder depends upon the diameter of the screw. An 8-inch screw should run about 20 R.P.M., a 10-inch screw about 15 R.P.M., a 12-inch screw about 12 R.P.M., and

a 14-inch screw about 10 R.P.M. It is also desirable to have the front screw, baffle plate, and hopper of plodder cadmium plated. This layer of cadmium prevents the soap from coming into contact with iron and avoids the possibility of spoilage due to spotting caused by presence of heavy metals in the soap. A plodder of this type is also easier to clean.

As the continuous bar of soap emerges from the plodder, it passes to the cutting table between two vertical guide rollers, and rests on a series of horizontal rolls. When the bar has travelled the full length of the rollers on the cutting machine, it contacts a tripping device which releases a knife cutting off a bar the width of the table. At the same time, it sets in motion a pushing device which pushes this long bar through a series of taut wires, set apart at the desired distance at right angles from the direction in which the ejected bar has been travelling. This operation cuts the long bar into the desired number of pieces of equal length for feeding to the soap press. These pieces are then fed to the press either manually or automatically depending upon the type of press employed.

In smaller plants where an automatic cutting table is not employed, the cutting is done by hand. An ingenious device for hand cutting consists of a slide fitted into the flange which holds the shaping plate in place. Into this slide is fitted a taut wire which can be drawn back and forth rapidly to cut the bars into the desired length as the soap comes out of the plate. By this method, the long, continuous bars which come from the plodder are run over a roller board set to the proper height and the operator first cuts the bars to the desired length by hand, and places them on the cutting table. When the correct quantity of long bars have accumulated, they are forced through the taut wires with a hand crank which operates the pusher by a series of gears and track.

Practically all milled soaps today are pressed by automatic presses. For certain types of soaps and at the smaller plants, however, foot presses are still used. The soap which comes from the automatic cutting table is usually fed by means of a conveyer belt directly to the magazine of the automatic press. The latest types of automatic soap presses turn out upwards to 200 cakes per minute. Experience foot operators will turn out about 75 gross per day.

In some cases, pin dies must be used for pressing. The blank pieces coming from the cutting table are cylindrical in shape. The feeding of the automatic press in this case is done by placing these on an inclined feed board and allowing them to roll by gravity to the press. Pin dies clip off the ends of these cylindrical bars and produce a cake without a cushion, or free from "water marked" ends. They leave a scrap in the form of clippings which must be returned to the plodder or mill. In any event the pressed bars are discharged onto a conveyer belt and fed directly to a wrapping machine or packed into cartons, whichever the case may be.

The type of layout, and milling and plodding unit naturally depend on the size of the plant and the capacity desired. For a small plant, the unit could consist of an amalgamator, one mill, a plodder, roller board, cutting table and a press. The arrangement for a larger unit could consist of two stone roll mills connected in tandem, a plodder, cutting table and automatic press. This set-up could also include an overhead conveyer system to return the soap ribbons emerging from the second mill to a hopper directly above the first mill where it is held until the batch has cleared the second mill. It could then be dumped into the feeding hopper of the first mill again and passed through the mills for a second operation.

Dried soap ribbons emerge from the dryer and are conveyed to the storage bins.

After it has passed through the mills the second time, the soap could be fed by a conveyor directly to the plodder.

Still another arrangement for a larger plant is to suspend the amalgamator on a scale. From this amalgamator the soap is dropped into the hopper of the first stone mill, fed into a second stone mill and thence into a larger iron roll mill. The soap after passing through the iron roll mill goes through a pre-plodder and from thence to the finishing plodder, through the cutting table and onto the press. This lay-out does not require overhead conveyors as the soap moves in a straight line.

There has recently been developed a method for obtaining the results of the mills without employing either stone mills or steel roll mills. This arrangement consists of an amalgamator which feeds the hopper of a plodder. The plodder does not have a nose or nozzle. Instead a steel plate is drilled with numerous small holes 1/8 of an inch to 1/32 of an inch in diameter. The soap is forced through these small holes by the screw. It then drops into the hopper of a second plodder and a third plodder of the same construction. After it has passed through the third plodder, the soap is fed into the hopper of the finishing plodder, thence through the cutting table and press in the usual manner. This method has certain advantages. In spite of the fact that there has been considerable hesitation on the part of soap-makers to adopt it, there is a distinct economy in power. Overheating is eliminated because the compression cylinder is water-jacketed, there is an economy in perfume, the operation is much less noisy, dropping of soap from the rolls of the mills is eliminated, less labor is required, the initial cost of installation is lower, and the amount of soap scrap is reduced to a minimum. A few large manufacturers have adopted this method and eliminated their mills.

THE actual procedure of carrying out the milling operations can only be superficially described. Experience, the various kinds of perfumes, fillers, etc., as well as the climatic conditions under which the milling operations are carried on, influence this operation very materially.

It is assumed that the proper size batch of soap flakes containing approximately 13.5 per cent moisture has been weighed into the amalgamator. The mixer in the amalgamator is then started and the necessary quantities of zinc oxide, titanium dioxide, or similar material, as well as the perfume, color, or any other additions are added to the batch. Whenever water soluble colors are employed, a solution of the color should be prepared in advance. This is done by dissolving the desired amount of the dry dyestuff in boiling water, adding a small amount of sodium carbonate and when the solution has cooled, filtering it into a suitable container in which the finished solution can be made up to a known volume. The color solution is then used by measuring out the desired volume to produce the desired shade. When titanium dioxide is used instead of zinc oxide, one will find that approximately 30 per cent of the quantity of zinc oxide is sufficient. The usual amount of zinc oxide added is between 0.5 and 1 per cent based on the weight of the soap. The purpose of adding these inert materials is to eliminate translucency and to make the soap whiter and more attractive in appearance. The batch of soap together with the added materials are mixed in the amalgamator from 10 to 15 minutes and then dropped into the hopper of the mill.

The mill picks up the soap mass as the rolls revolve and spreads it out as a thin film,—by squeezing it between the rolls—covering the entire surface of the roll. As already stated, it goes from roll to roll as a plastic homo

geneous film. When the milling operation is being carried out care must be taken to see that the rolls themselves do not overheat. This condition slows up production and causes loss of perfume as well as reducing the opacity of the soap. This heating-up is often caused by excess of moisture, but no matter what the cause, probably it should be corrected by using a drier soap, or if this does not remedy the trouble, then the pressure between the rolls may be too great. The pressure may be reduced by loosening them or the mills may be shut down to allow the rolls to cool.

During the milling operation it always happens that particles of soap fall into the milling pans on the floor. Any pieces of soap that fall into these pans should be picked up and promptly cleaned and re-milled. If they are allowed to remain too long a time without taking this precaution these pieces dry out and form hard spots in the soap which show up in the finished cake. As a general thing, it might be stated that overmilling of soap is not desirable. The proper degree of milling is that which thoroughly mixes the ingredients and removes the hard spots in the least number of millings. Usually two passages through a tandem mill are sufficient, but in some cases more millings are necessary.

After the soap is discharged from the mill it should be conveyed to the plodder at once. This is good practice for the reason that the plodder will then be supplied with a uniform, moderately warm soap which in turn insures a uniform cake. If the milled soap is not promptly fed to the plodder there is apt to be later difficulty in cracked or streaked cakes because the temperature of the soap is not uniform. No fixed temperature can be given as being the best one for the very reason that the temperature varies from season to season. Then too, local conditions as well as the type of soap base used influence this. The temperature of the soap fed to the plodder is usually between 100 and 115° F. The higher temperature is probably nearer common practice.

To carry out the plodding operation the milled soap is first fed into the plodder hopper until it is about ¼ full. Then the screw is started turning and cold water is turned into the jacketed compression cylinder. It is, of course, presumed that the plodder is empty and clean. Heat is then applied to the extreme end of the nozzle or nose, being certain that the nozzle is warm when the soap reaches it. The first soap which issues through the plodder will be streaked and is very apt to show small V-shaped pieces curling up. As long as the soap is ejected in this condition the bars are cut off and returned to the plodder hopper.

If all conditions are right the soap will soon come out smoother and highly polished. This is the correct condition. Should too much heat be applied to the nozzle the soap will usually emerge streaked and blistered. If the nozzle is too cold then the soap will appear rough, dull, and breaks will show in it. We have already indicated that there is a baffle plate between the compression cylinder and the nose of the plodder. The size of the holes in this baffle usually vary from 1/32 to ⅜ of an inch in diameter. It should be pointed out that a large number of small holes is generally preferable to a smaller number of large holes because this will make the soap more homogeneous with less chance of cracking.

The operation of the cutting table is a comparatively simple matter. The principal precautions to be taken are cleanliness, careful handling of the bars, keeping the cutting wires clean and properly spaced, and returning the scrap to the plodder clean and promptly. If the table is not kept clean at all times this neglect will show up in the finished cake. If the bars are handled carelessly there will be mars in the finished pressed cakes and an excess

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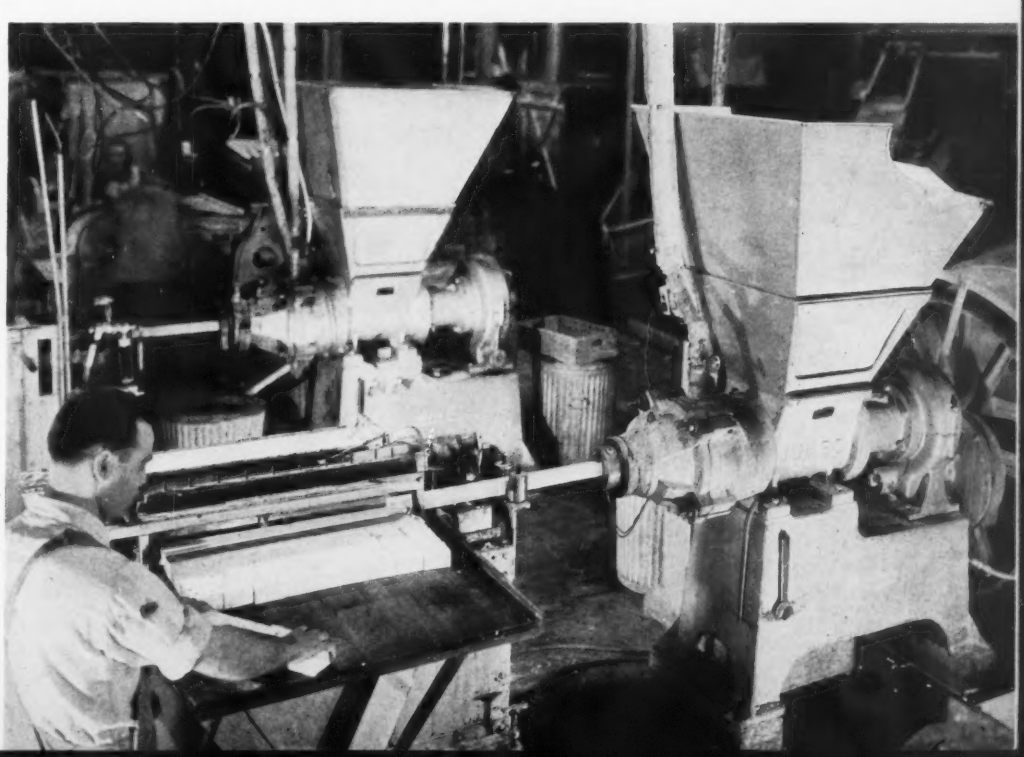

The continuous bar of soap comes from the plodder to be cut into blank cakes, which go to the press.

Ewing-Galloway

SCOURING

By RALPH H. AUCH

Chief Chemist, American Products Co.

SCOURING powder appears to be the handmaid of household and laundry soaps, chips and beads, yet, paradioxically enough, few of the larger soap manufacturers appear to merchandise them aggressively. They are highly competitive nevertheless and those with faint hearts had best remain on the side lines and let others fight for places in the sun. The results of two surveys, one published and one unpublished, but each made in a thoroughgoing manner in two mid-western cities are quite interesting. Both are equally reliable and the cities where the surveys were made may almost be looked upon as sister cities, being less than three hundred miles apart.

In the published figures of one city, a five cent seller practically dominates with 45.8 per cent consumer acceptance and a 10 cent seller is runner-up with 14.3 per cent. In the unpublished figures of the other survey, the figures are practically reversed with the same 10 cent seller enjoying 42.9 per cent of the call and the same 5 cent seller the brand preference of only 19.6 per cent. The third choice is one and the same cleanser with 6.5 and 11.8 per cent of the call in the respective cities. The same is true of the fourth choice with 6.2 per cent and 5.2 per cent in the two surveys. In the first city, nine brands each enjoy 1 per cent or more of the call and a total of 62 brands were named by consumers. In the second city, 10 cleansers were the branch choices of 1 per cent or more of those filling out the questionnaires and 66 brands were mentioned.

Some may doubt that there are so many scouring cleansers in the world. This writer did, so he checked that point and found a number of housewives a bit confused. They named as their favorite brand 4 soap powders, a water softener, a powdered ammonia, and borax. This indicates that in spite of all that has gone before, much remains yet to be done in an advertising way to educate the housewife.

Household cleansers as a class are being more aggressively advertised and merchandised than ever before, and at least two new brands have come from nowhere to a place where they have the old well-entrenched brands worried. Rumor has it that the manufacturer of one of the old popular brands is soon going to come out with an entirely new product. About the only thing on which manufacturers are reasonably well agreed is the package size at 14 ounces. In composition, cleansers vary widely in spite of the fact that basically only three ingredients are necessary, namely, soap, an alkaline salt or salts, and powdered abrasive.

Six representative cleansers were analyzed and their

POWDERS

composition scrutinized. A discussion of the results with suggestions for good formulation practice follows.

The soap content.—The soap content on a "real soap" or anhydrous soap basis ran from 1.36 through 3.51, 4.69, 4.78 and 5.20 to 6.77 per cent. The titre of their soaps varied from 19.0° up to 37.6° C. Those brands whose manufacturers probably make their own soap had the lower titres. There is little likelihood that the soap is added as such, in fact microscopic examination of the cleanser indicates that the soap used is a filled soap pulverized. Screen tests showed an appreciable content of coarse particles.

The soap might well be more finely ground, not only for the sake of the appearance of the cleanser but to facilitate ready solution in use. Since much of the cleanser is used in cold or tepid water it appears the part of wisdom to use a soap of low titre. It may just as well be of low grade and highly filled also.

The alkaline salt content.—The alkaline salt content was as low as 0.26 up through 2.10, 6.09, 7.73 and 10.27 to 18.85 per cent. In composition, it was largely sodium carbonate although a part of some of them was sodium silicate and tri sodium phosphate. It is worthy of note that two relative newcomers carried the two high alkaline salt figures, a part of which is in both cases trisodium phosphate. It would appear that they recognize the fact that the cleanser need not scour by mechanical means i.e. abrasion alone but by detergent action as well.

Cleansers are used in relatively high concentration and as a gauge of their harshness pH determinations were made on 5 per cent suspensions. Three of them were within safe limits at 9.6, 9.7 and 9.8 respectively, but the other three had a pH right around 11.0. This latter figure is well above soapy water as ordinarily prepared for laundering and dish washing. Since many women's hands will not stand ordinary soapy water, some doubtless rebel at the harshness and adverse effect on their hands of these three cleansers with high pH values.

In formulating a cleanser, it is an easy matter to so buffer the cleanser as to bring the pH down to a safe point. This writer once formulated a household specialty with a pH of 9.5 in the recommended concentration as per directions. If the user, for example, in her enthusiasm or through carelessness dumped in twice the directed quantity, the pH figure did not go up but actually dropped down to pH 8.8.

Borax, modified soda, sesquicarbonate of soda, or even bicarbonate of soda may be found useful for the purpose of lowering the pH of one's pet formulation. With the proper use of such buffers, trisodium phosphate, or sodium metasilicate, or both, may be incorporated in such cleansers with marked advantage without developing sales resistance due to adverse effects on the user's skin.

The abrasive.—Microscopic examination of the separated abrasives from the above six cleansers indicates four are using feldspar, one pumicite (volcanic ash) and one a mixture of pumicite and amorphous silica. The percentages of abrasives used vary from 69.45 through 81.21, 84.40, 84.63 and 88.08 to 92.62 per cent on a dried basis.

There may be some "silex," that is, powdered silica used by some of the smaller manufacturers, but abrasive tests indicate it has no place in products of this type. The usual grind is 200 mesh, but one manufacturer using feldspar has an appreciably finer grind. He is said to do his own grinding.

Evaluating the Raw Materials

LITTLE need be said about the soap as most any low titre soap finely ground is quite satisfactory. Such soda ash as is used should be the light fluffy material as at best the cleanser is quite dense. The sodium metasilicate should be the "fines" grade. Standard grade borax is usually satisfactory and there is no point in paying a premium for the extra finely powdered. The needle-like fine crystals of sesquicarbonate of soda break down in mixing to a satisfactory state of subdivision.

The trisodium phosphate should be the "fines" grade although if grinding equipment is available one may grind his own from the flake. Since flake trisodium phosphate is manufactured with a deficiency of water of crystalization, there is less likelihood of lumping in the finished cleanser.

The modified soda may be the usual laundry grade, running 42-46 per cent sodium carbonate and 44-41 per cent sodium bicarbonate and 13 per cent water. If, however, the soda is used primarily as a cleanser and not as a buffer, another standard grade running about 60 per cent sodium carbonate and 27 per cent sodium bicarbonate may be found preferable.

Confusion exists in the minds of many on the various

abrasives for cleaner use so they will be discussed at considerable length. The reason is not far to seek, because in the case of feldspar, for example, one miner offers 99 standard grades of original and mixed spars. Many are prepared, of course, for other purposes, such as ceramic work, both body and glaze, poultry grit, stucco, binder for abrasive wheels, etc. Since only about 7 per cent of the feldspar produced is sold to the soap manufacturer, he cannot be too dictatorial. The descriptive matter relative to abrasives is drawn largely from various United States Bureau of Mines publications and from brokers, while the methods of evaluation are those adopted, adapted, or developed by this writer.

Efficient abrasive material should be uniform in texture, particle size, and also hard and sharp. Abrasive qualities depend to a considerable extent upon the shape of the individual particles. In certain pumicite deposits, the particles are flat or plate shaped and send to slide over a surface rather than to abrade or gouge it. Such action impairs the value of the material as an abrasive insofar as speed is concerned. It is an actual advantage in material used for scouring powder, particularly in the case of that manufacturer whose sales department or advertising agency conceived the coin test and the cleverly coined name for his (pumicite) abrasive.

Silica

AMORPHOUS silica is available in many localities. However, much of the higher grade comes from the Ottawa and Wedron districts in Illinois. The material is open quarried, run through crushers and carefully screened and graded. It is then washed, dried and rescreened. In some instances a water flotation process is used to effect separation of the finer particles. Silica will run 97 to 98 per cent S_1O_2 and the usual grain size offered this industry is 87 per cent 250 mesh and 13 per cent 200 mesh.

Closely related is the white or off white tripoli which has about the same composition chemically. Physically it may be quite dissimilar, especially that from the southeast i. e. the Tennessee-Georgia district. It is a finely granular, porous, siliceous rock of chalcedony type. The double ground is best for cleanser use since all will pass 100 mesh and approximately 95 per cent will pass through 200 mesh.

Feldspar

FELDSPAR apparently is the most widely used of the three abrasives for cleansers. The purchase of proper feldspar must be carefully done because it is associated with various types of impurities and the material itself is widely variable in composition. Feldspar is not a specific mineral of definite chemical composition, although the physical properties are remarkably similar.

Commercial feldspar is obtained from pegmatic dikes and in most dikes, feldspar and quartz are crystalized too intimately to permit complete separation. For ceramic use, this matters little, if at all, but for cleanser use it should be quartz free. In very carefully conducted abrasive experiments on various metals, this writer found a wide variation in feldspars. Considering the abrasiveness as whole numbers the figures varied from 417 to 482. The latter material made visible scratches on most metals.

Whether the greater abrasiveness is due to the greater hardness of quartz alone or in part to the larger particle size (greater resistance to grinding at the vendor's mill) has as yet not been definitely determined.

Pumicite

BOTH pumice and pumicite are silicious volcanic substances similar in composition. Pumice is formed by sudden expansion of the gases in molten lava, which subsequently is quickly cooled. Pumicite, on the other hand, is composed of small, sharp, angular or platy particles of volcanic glass spumed from volcanoes. Pumicite exists either wholly unconsolidated or the particles are more or less cemented together or agglomerated. Most of the commercial material is produced in Kansas and California. Its hardness runs from 5.5 to 6 on the Mohs scale.

From Bureau of Mines Information Circular 6560 the following account of pumicite production is quoted. Milling operations consist essentially in freeing the individual particles from one another, removing excess moisture, eliminating impurities, such as clay, concretions and other harmful substances, grading the pumicite particles to the sizes desired and packing for shipment.

At the pumicite deposits of the middle west little or no crushing or grinding is necessary to free the pumicite grains. At the operation of the Cudahy Packing Company in Meade County (Fowler, Kansas), the pumicite is shoveled by hand from the quarry floor into wagons which transport the crude material to the mill. There it is dumped or shoveled into hoppers and then fed into an inclined oil burning rotary kiln where the water, which may be as much as 20 per cent of the weight of the crude material, is driven off. The dried pumicite is passed through a revolving five mesh screen to air separators. The oversize from the screens and the overweight from the air separators are ejected. Graded pumicite is packed in paper lined freight cars and shipped to Chicago where 2 per cent of soap is added to make a well known scouring compound.

Evaluation By Physical Test

ON the face of it, color appears of minor importance. However, a distasteful odor due to the poor soap used in some cleansers, plus a dirty gray or brown color on wetting in use cannot help but adversely affect its sales. A rough comparative test by the unaided eye is of little value. A quick, easy method consists of forming a small pile of the standard on a piece of white or blue paper and another of the abrasives to be tested alongside of it. Any difference is more apparent by pushing the

heaps close together and flattening and compressing them with a spatula so that the contact between the two is a straight line. For closer matching, the standard and sample being examined may be moistened with turpentine which accentuates any difference in shade.

Extraneous dirt. Suspend 20 grams in 500 cc of water in a graduated cylinder. Shake vigorously and let settle. Not only does the extraneous material show up but a fair gauge of uniformity of grind is obtained. Observe both the top and the bottom for some of the dirt will be found floating but much more will be observed in the bottom of the cylinder. It should settle reasonably clear over night. If not it contains an undue amount of valueless fines and clayey material.

Grit. The so-called grit may be oversized, insufficiently ground abrasive material. More frequently it is quartz or other silicious material that resists grinding due to its greater hardness. It costs money to get a uniform fine grind. For example, one miller's hourly capacity is 2.36 tons running on 140; 1.89 tons on 200 and 1.52 on 230 mesh feldspar.

The relative amount and coarseness of the gritty material may be readily determined. A satisfactory method which is practically quantitative is to run the following floatation test. Pour 250 cc of water into a 400 cc beaker and make a mark on the beaker to indicate the water level. Weigh 10 grams of abrasive into the beaker and fill to the mark with water. Stir vigorously with a stirring rod then let settle for exactly one minute and pour off the cloudy water.

Repeat this process until the supernatant water at the end of the minute can be poured off practically clear (usually ten times is sufficient). Place the beaker on a steam bath then in an oven until thoroughly dry. Brush out the settled grit onto a tared watch crystal and weigh. Calculate to percentage. Three or four samples may be run simultaneously to conserve time.

By saving and labeling the samples of this settled material in small jars, a museum can be accumulated that is of considerable help in evaluating future samples.

Specific gravity. The specific gravity of abrasive material, as such, is of little value. The apparent density, i.e., the ratio of weight to volume, however, is of much value and can be readily determined. Obviously less of a fluffy abrasive material is required to fill the usual 14 oz. cylindrical can or, conversely, 10 ozs. of a heavy dense material makes a very slack fill in the usual size can. One needs only to cut the top out of several commercial cleansers to find one brand well filled and another quite slack,—a matter on which regulations are bound to come sooner or later.

A tared 100 cc graduated cylinder is filled to the mark and weighed, always under identical conditions. A copper funnel, having a wide mouth that will just slip into the top of the cylinder is useful for filling.

A more accurate method is to tap the samples under standard conditions for greater uniformity in results. A representative portion of abrasive is sifted through a 30 or 40 mesh sieve. For convenience, the material may be rubbed through the screen with the fingers, protected with rubber finger stalls, or with the aid of a shaving brush with the bristles cut short. One hundred grams of sifted abrasive is carefully transferred to a 250 cc cylinder and the cylinder stoppered.

The cylinder is dropped 50 times through a one-inch fall at two second intervals to compact the material. To facilitate getting two second intervals a stop watch is used, while a fixed stop one inch from the table top is convenient. Better still, a hinged box two thirds the height of the cylinder with a rubber mat in the bottom and a stop one inch from the base with a hole of diameter slightly larger than the cylinder, but smaller than its base, may be made.

A hole of like diameter in the top of the box acts as a guide. The box is split through the middle in a vertical plane and hinged to permit ready admission and removal of the cylinder. The reading is made in cubic centimeters. This test is applicable to finished cleanser also and provides a gauge of how full or how slack the containers will fill with any given standard weight.

Moisture. Ordinarily no moisture determination is required since the moisture content of any of the various abrasives will rarely, if ever, exceed 4 per cent. If there is evidence of the material having been wet in transit or otherwise, it is a different matter, of course.

Use and Marketing Facts

BEFORE closing, a few words further about the formulation of a scouring cleanser. The abrasiveness of a cleanser is a function not only of the powdered abrasive used, but of the other ingredients employed as well. For example, any given abrasive of a given mesh has a certain speed of cutting. Soap, trisodium phosphate and sodium carbonate, if added singly, each reduce the cutting speed as much as 50 per cent. Each apparently exerts a lubricating action, which reduces the bite of the abrasive particles.

If both soap and an alkaline salt, particularly in the case of sodium carbonate, are added in about the average amounts of 5 per cent of each, the abrasiveness is materially increased. The abrasiveness may be as much as doubled. This is probably due to the jellying action of the alkaline salt on the soap which holds the particles against the cloth or brush to better exert the scouring action.

Packaging and merchandising may be out of place in this discussion, yet a few random remarks may not be amiss. Much merchandising effort has been directed toward lifting scouring powders out of the commonplace. However, surveys show it is still predominantly a kitchen item in spite of the various attractive bath room holders offered from time to time by the cleanser makers.

One manufacturer launched a dressed up package somewhat larger than his regular size at 25c. To date it has not been eminently successful. It would appear that it takes more than attractive, somewhat oversize package

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ROSEMARY

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phenol non-crystallizable,—and only a few per cent of thymol. These classes of thyme oil are further classified as oil of thyme red and oil of thyme white, for the thymol type, and Spanish origanum oil and white origanum oil, for the carvacrol type.

Red oil of thyme is distilled mainly in Murcia and Almeria, Southeastern Spanish provinces, and also in France, from Thymus vulgaris L. and Thymus Zygis (var. gracilis). This red oil is the crude distillate, the red color probably being due to the action of the phenols of the oil on the iron of the still. When this crude oil is rectified it gives the colorless or white oil. A certain amount of oil is lost during the rectification process. The phenol content of white thyme oil should therefore be higher than that of the red oil, and lower phenol contents point to tampering of some sort. White thyme oil can also be drawn off during the fractionation of red thyme oil which is carried on to produce thymol. French oils are mostly of the thymol type. The distillation of these oils is carried on from June to August.

The origanum oils are distilled mainly from Corydothymus capitatus in the Sevilla district of Spain from May to August. The dark-colored crude oil, when rectified, yields a light yellow product,—sold as oil of origanum white. Here, as in the case of the thymol oils, the rectification causes a loss of oil and a corresponding increase in the phenol content of the product.

The percentage of phenols present forms the basis for the commercial valuation of thyme oil. Formerly the U.S.P. required that pure thyme oils should have a phenol content of at least 20 per cent. Since the pure oils usually have at least 40 per cent of phenols present, the practice was to cut down these high percentage oils and fill the demand for cheaper products. At present there is no U.S.P. requirement for thyme oils. Thyme oils are cut down liberally with the terpene, p-cymene, which occurs naturally in the oil. In order to increase the phenol content of thyme oils, the use of synthetic carvacrol is resorted to. A great deal of adulteration of this type is carried on, with synthetic thymol as well. Some oils which are sold as pure thyme oils consist almost completely of mixtures of these synthetic phenols, thymene, another natural component of thyme oil, and oil of pine. Chemists are very often in a quandary in attempting to determine the purity of these oils. It is imperative, however, that it should be possible to distinguish between the pure and impure products as the impure oils are very unsatisfactory for certain purposes.

The bulk of the production of thyme oil is absorbed by the soap industry. A very small quantity of thyme oil used in soap produces a remarkably fresh odor. Thyme oil, like oil of rosemary, can never be used alone for perfuming soap on account of its strength. Thyme oil is a very good perfuming material for soap inasmuch as its odor is agreeable and does not change rapidly, and inasmuch as it does not cause any discoloration, thus being practicable for both white and colored soaps. Impure oils, however, discolorize readily in white soaps and after evaporation leave a slight carbolic note. Pure oils leave a delicate trace of the plant odor on drying.

Its high germicial value makes thyme oil an extremely valuable material for use in disinfectants, gargles, tooth preparations, and many other kinds of pharmaceutical preparations.

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SCOURING POWDERS

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to lift so commonplace a household product into the specialty, almost luxury, class. Reformulated to be deluxe in convenience and cleansing qualities rather than in name alone might still put it over market-wise.

Another cleanser came to market at 15c in spite of the fact that the housewife has so long considered 10c the top price for such a product. He reduced his price to a dime and continued to capitalize "a 15c cleanser at 10c." If he launched it at 15c fully intending to ultimately sell it at 10c, it has doubtless proven a clever bit of sales strategy. If, on the other hand, his material and packaging costs were based on a 15c retailer and sales resistance forced the price reduction, it unquestionably cramps his style. He has a lowered profit margin which restricts his merchandising and sales promotion. Further, he is committed to a fibre container which is oblong in cross section. Such a container costs approximately 55 per cent more than the round one his competitors use with entire satisfaction. A permanent handicap,—unless he has the courage to admit his error and restyle! The round can is spirally wound whereas the one oblong in cross section is laminated board. The tin tops and bottoms of the former may be of any tin scrap often lithographed, with the lithographing on the inside of course. In fact, one manufacturer is using a terne (lead) plate instead of tin plate top and bottom apparently satisfactorily.

And, in conclusion, a word about the folly of the other extreme. An inferior cleanser has flooded some markets, first, at 2 for 9c, then 3 for 10c, and, finally, 2 for 5c, or 29c per dozen at the chain stores. And chains, incidentally, sell as much as 40 to 45 per cent of the total volume of cleansers in some markets.

In the first place, the abrasive is very poorly ground pumicite high in scratchy quartz and extraneous dirt, which is so dense that the usual weight in the usual size cans makes a very slack fill,—not over three-quarters full. In the second place, it is a fact, singularly enough, that cleansers do not sell in volume in cheaper neighborhoods where the price appeal normally should have the best chance. Accordingly, the retailer rings up a small sale that might just as well be a larger one to a class of trade most of whom are well able to pay a higher price and critical enough to voice their dissatisfaction. And, finally, the inferiority is easily demonstrable by the

scratch test on glass. One aggressive merchandiser, using a high quality pumicite base, is smart enough to provide his salesmen with microscope glasses to beat down this type of cleanser competition.

MILLED TOILET SOAPS

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amount of scrap is produced. By keeping the cutting wires clean and tight, unmarred cakes of uniform weight are assured. It is important that the scrap from the cutting table be caught in a clean receptacle and be promptly returned to the plodder while still warm.

After the soap has been cut into the desired size of blank cakes the pressing is a comparatively simple matter though there are certain details of this operation which require close attention. When automatic presses are employed, the feed and delivery belts should be kept clean and smooth. The dies also must be set properly and kept clean. The use of salt water or glycerine on the dies themselves should be kept at the very minimum and resorted to only when absolutely necessary. Sufficient pressure should be employed to insure a good cake. The dies too should be cleaned carefully to be certain that the lettering or other imprint on the cake is sharp and clear. If the dies are not operating satisfactorily, they should be re-fitted and the lettering should be eased. If sufficient pressure is not employed on the cake it is apt to warp out of shape while over-pressure will cause unnecessary wear and tear on the press. Then too, it is important that the blank bars be pressed while warm otherwise cracks will appear on them. When the soaps are finished by foot presses, they should first be spread on a tray to develop a slight skin but should not stand around too long a time otherwise the faults already indicated are apt to show up.

IN addition to the defects already indicated, there are a number of other failures and faults which may occur in the finished bar of soap. The more common of these are rancidity, spotting, overall discoloration and cracking. Much information is available in the literature from time to time regarding these defects in toilet soap and other soaps. Methods of prevention are also given. It is questionable, however, whether much of this information is of any value to the soap manufacturer. Some investigators have limited their efforts to finding some magic addition to the soap in order to cure the ills. In their zeal to find such a substance, they have not given proper consideration to preventive measures.

The addition of anti-oxidants and preservatives is indeed a fertile field for solving the difficulties resulting from rancidity, spotting or general discoloration. Oxidation of the unsaturated fatty acids is ordinarily considered as one of the most probable causes of rancidity. It can be stated that if the fats or oils used in making the soap base have been carefully saponified, the rapid oxidation of the fatty acids cannot take place unless they are liberated through some other agent. It is, therefore, important that a complete saponification of the soap be carried out. If one is sure that this has been done, then measures must be taken to prevent the defects caused by other conditions.

As has already been indicated, the presence of heavy metals or their salts are an important cause of rancidity, spotting and discoloration of soap. The maufacturers of the alkalies, used in soap making, have analyzed this condition and now produce a caustic soda containing less than 25 parts of iron per million. It seems futile, however, to use such a highly-purified caustic soda when the soap becomes contaminated by iron during the soap-making process. If iron is to be entirely eliminated, then the soap manufacturer must use extreme precautions in the storing of his raw materials and during the manufacturing operations. The difficulty is that to do this requires considerable more investment in equipment. It can, however, to a large extent be eliminated by storing the fats and boiling the soap in iron tanks and kettles lined with light gauge Monel metal or to construct the tanks and kettles, especially the top sections and covers, out of nickel-clad steel. And it is even advisable if extreme care is desired to construct the entire kettle from nickel-clad steel. Monel metal and nickel-clad steel plates are highly resistant to the action of fatty acids. The pumps and pipe lines should also be protected by using resistant metals to prevent the introduction of iron.

In some cases the soap base is bleached in the kettles. This very often leads to discoloration and rancidity. While this is a more economic or more rapid and convenient way to bleach soap, it is far better practice to purify and bleach the fats and oils before they are made into soap. Soap which has been bleached in the kettle is usually unstable. It is, therefore, more common to find such soap developing a dark color and a bad odor after it is aged.

For a long period of time a small excess of free alkali has been permitted to remain in the soap during the finishing operation. This has been done as a preventive of rancidity. Before the introduction of the modern drying machine, the soap was framed and cut into thicker chips with the result that much of this free alkali remained in the finished bar. The drying machines, however, produce a thin chip with ready access to the carbon dioxide of the air with the result that the hydroxide is changed over to the carbonate. The carbonate does not seem to have the same anti-rancidity value as the hydroxide.

Among the various additions which are made to soaps for the prevention of rancidity and discoloration, sodium hyposulfite is probably most generally used. This is especially true of cold-made soaps. The usual addition lies between 0.2 per cent and 0.5 per cent. Excessive additions will cause the soap to become "short," dry, and produce cracking. It is also claimed that the addition produces an unpleasant odor. This salt is generally added by first making it up into a 50 per cent water solution, filtering it and adding it to the soap in the crutcher. It should also be pointed out that if the soap base has been finished with a higher percentage of salt, then the addition of

(*Turn to Page* 73)

New Products

New powdered soap dispenser recently patented by Presto Manufacturing Co., Minneapolis, Minn. Revolving brush within dispenser agitates soap in order to prevent clogging.

Goodier Co., Dallas, Texas, packages two items in its polish line in newly designed glass containers which show family similarity together with a sufficient differentiation to identify each package separately. Caps supplied by Armstrong Cork Co.

New products for the dog just placed on the market by Animal Supply Corp. of America, Brooklyn. The new packages, designed by Ben Lewis, are in bright and daring colors. They contrast effectively with the cut-out counter displays designed to show off the new products.

and

Packages

A new disseminator for deodor ants, moth liquids, perfumes etc., designed by Double Duty Products, Inc., Cleveland. Rate of dissemination is said to be constant whether container is full of liquid or nearly empty

New package family just designed for "Kleeno" furniture polish and machine oil, products of Gem Hammock & Fly Net Co., Milwaukee, by Owens-Illinois Glass Co. The labels contain several shades of red which tie in harmoniously with the color of the product.

◆

A new product of Parfumerie De Raymond, Inc., New York, "Pinx". The milled tablets, old ivory in color and each approximately 3 ozs. in weight, are packed three to a box, selling at $1.00. The container was supplied by Mir Paper Box Co.

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NEWS . . . . . .

Atlas Soap Co. Formed

Atlas Soap Co. has been organized in Brooklyn, N. Y. with plant and offices at 71 Delavan St. to manufacture soap powders, scouring powders, and other soap specialties. M. Shampanier, formerly associated with the American Soap Powder Works of Brooklyn is head of the new firm.

Markets New Soaps

Blue Heven Corp., North Kansas City, Mo., cleaning compounds, is placing on the market two new brands of soaps. One is of the paste type, made of vegetable oils, and used only by dry cleaners. The other is also of the paste type and a cheaper product. The company has re-elected the following officers: president, Earl E. Treanor; secretary, L. G. Doup, and treasurer, Val Hakanson.

Black Toilet Soap

Morny Ltd. of London have specialized in the production of very brightly colored bath soaps to meet the demand for soaps colored to harmonize with bath-room decorations. The latest addition is the production of a jet-black soap. It gives a white lather and does not discolor the towel. *Manufacturing Chemist* **7**, 121 (1936).

Soap Executive Builds

Chester H. Youngber, executive of the Kansas City office of Colgate-Palmolive-Peet Co., is having a new seven-room colonial residence erected at 4924 Bolinder Road, Kansas City.

To Direct "Ingram" Advertising

Bristol-Myers Co. has appointed Pedlar & Ryan, Inc., New York, to handle the advertising of "Ingram's" shaving cream, effective July 1. Robert B. Brown continues as advertising manager for the product.

Named Colgate Treasurer

George F. Adamson has been elected treasurer of Colgate-Palmolive-Peet Co., succeeding the late

Colgate's New Treasurer

L. C. Proesch. Mr. Adamson has served as assistant office manager since the merger, and has been with the firm longer than any other employee, his first connection with Colgate & Co. dating back over fifty years.

Cut Egypt Soap Duty

The duty on imports of hard soap into Egypt has been reduced recently from 650 milliemes to 600 milliemes per 100 gross kilos.

Soap Export Inquiry

A concern in Bombay, India is interested in establishing a sales or agency arrangement with an American manufacturer of low priced toilet soaps. Interested concerns may communicate through the U. S. Bureau of Foreign & Domestic Commerce, mentioning inquiry No. 513.

Hipp with Wilbur-Ellis

George Hipp, formerly with Spencer Kellogg & Sons, Buffalo, coconut oil crushers and refiners, is now managing the Chicago office of Wilbur-Ellis Co., oil and fat brokers. R. B. Jude, formerly at Spencer Kellogg's Boston office, has taken Mr. Hipp's position in charge of coconut oil sales.

So Bright Co. Moves

So Bright Products Co., soap makers, formerly at 2321 North 28th St., Milwaukee, moved recently to 2156 North 27th St.

Offers New Paint Remover

A new product, called "Wonder-Paste," has just been introduced by the Roehmheldt Co., 127 E. Third So., Dayton, Ohio, for removing paint from walls and ceilings. The product is applied with a brush and action is declared to be instantaneous.

Add Hydrogenating Plant

Industrial Oil Products Corp., a subsidiary of Murray Oil Products Co., whose plant is located in Los Angeles, is installing a hydrogenating plant and is planning to hydrogenate oils for the trade.

Guenther Sails for Europe

Dr. Ernest S. Guenther, chief research chemist of Fritzsche Brothers, Inc., New York essential oil house, sailed for Europe May 9th, aboard the *S. S. Rex*. He will continue the work inaugurated by Fritzsche Brothers some years ago of surveying the different essential oil producing sections of the various countries, studying crop conditions, yields, quality of oils produced, etc. Dr. Guenther is expected to be away five months, returning to the home office early in October.

DO YOU KNOW?

Do you know about the new soap wrapping materials that are being developed to lower costs and improve the appearance of the package?

These new materials are in roll form, the wrapping machine accurately registering the printing on the cake by electric-eye.

This is an extremely interesting development. We will be glad to give you complete information. Write to our nearest office.

PACKAGE MACHINERY COMPANY

SPRINGFIELD, MASSACHUSETTS

NEW YORK - CHICAGO - CLEVELAND - LOS ANGELES
MEXICO, D. F., Apartado 2303
Peterborough, England: Baker Perkins, Ltd.
Melbourne, Australia: Baker Perkins, Pty., Ltd.

PACKAGE MACHINERY COMPANY

Over 200 Million Packages per day are wrapped on our Machines

Argue Haskins Tax Case

On May 29th the Court of Appeals of the District of Columbia heard arguments of counsel for both parties to the suit in which Haskins Bros. & Co., Omaha, and nearly 200 other soap manufacturers are attacking the constitutionality of the excise tax on Philippine coconut oil. The lower court had previously decided in favor of the government, upholding the constitutionality of the tax measure and stating that payment of the fund to the Filipino Government was legally acceptable in that it discharged a moral obligation of the United States. Following this decision the Haskins attorneys were successful in obtaining an injunction restraining payment of the fund to the Philippines pending appeal. The appeal case, which was just argued May 29, has been taken under consideration by the court, and decision will be rendered later.

The other Haskins case in which the government is appealing from a court decision restraining them from further collection of the excise tax was scheduled to come up for hearing before the Eighth Circuit Court of Appeals at St. Paul, June 3. It was expected that the Iowa Soap Co. case would also come before the court at this sitting. Whatever the decisions in these three cases, it seems probable now that all may perhaps be argued together on appeal before the United States Supreme Court at the fall term.

Soap Sales Down 10%

The volume of soap sales for the first quarter of 1936 shows a 10 per cent decline as compared with figures for the corresponding quarter of 1935, according to the first report just made by the Association of American Soap & Glycerine Producers based on their sales census. The reporting concerns, who represent 90 per cent of the production of the industry, show sales of 574,246,590 lbs. for the first quarter of 1936 as compared with 638,113,906 lbs. for the first quarter of 1935. Sales value for the two quarters shows a figure of $48,692,531 for the 1936 quarter as compared with $50,104,655 for 1935, indicating that while tonnage is off substantially prices of finished soaps have risen almost enough to keep gross income up to last year's figures. Costs of course are higher.

French Treaty Cuts Duties

The Franco-American Trade Treaty, signed May 6 and whose rates are scheduled to go into effect June 15, will reduce the duty on imports of perfumery, cosmetics and dutiable essential oils and compounds into United States by fifty per cent. This lowering of rates is not liable to mean a great deal in the way of lower prices for the buyer of imported perfuming materials in the soap field, according to importers in this field, as most of the common essential oils used by the soap trade are already duty free. Products most affected will be in the compound group and in this list the new rates will mean lower prices for the buyer of imported soluble resins and oakmoss products in the soap field. It is also possible that some of the other more expensive products, hitherto used exclusively in perfumes, will be made available for high-grade toilet soap use as a result of the duty cut.

Brooks Again Heads T.G.A.

H. L. Brooks of Coty, Inc., New York, was re-elected president of the Toilet Goods Association at the annual convention held in the Hotel Biltmore, New York, May 26-28. Other officers named at the close of the meeting included Cecil Smith, Yardley & Co., New York, 1st vice-president; J. H. Miller, Dorothy Perkins Co., St. Louis, 2nd vice-president; H. P. Willats, Colonial Dames, Inc., Los Angeles, 3rd vice-president; Paul F. Vallee, Roger & Gallet, Inc., New York, re-elected treasurer, and J. I. Poses, A. A. Vantine Products, New York, re-elected secretary.

The chief center of discussion at the business sessions was the Patman Bill now pending in Congress, as well as the various state acts likewise designed to control resale prices, quantity discounts, etc. The growing tendency to subject cosmetics to multiple taxation was also discussed and condemned by various speakers. The entertainment committee provided a full program for the meeting, including a theatre party and supper dance the evening of the 26th, a golf tournament at the Winged Foot Golf Club the afternoon of the 27th, and the annual banquet and dance the evening of the 28th.

Robertson Plant to Be Sold

Announcement has just been made of the projected sale of the assets of the J. T. Robertson Co., Syracuse, soap manufacturers, pursuant to an application made for liquidation of the estate. The company has been operating in receivership for several months in an attempt to develop a plan of reorganization which did not materialize however. Ernest H. Stauber, 332 S. Warren St., Syracuse, has been named trustee for the purpose of liquidating the assets.

CONCRETE *Lavender*

(COLORLESS)

Battery of volatile solvent extractors and evaporators in our Seillans plant.

Imparts LASTING FRAGRANCE at LOWER COST

CONCRETE LAVENDER COLORLESS is one of the outstanding specialties of our Seillans plant; its use in soap is especially recommended. Exhaustive experiments and practical application have proven conclusively that it produces a smoother, stronger, more enduring fragrance than the costlier distilled lavender oils. This is due to our process of manufacture which effects complete extraction of the natural odorizing principles along with the flower's natural fixatives.

Ordinarily, best results can be obtained by combining CONCRETE LAVENDER COLORLESS with distilled oil of lavender. Such combination produces a superior, more lasting fragrance at lower cost. Why not let us assist you in producing a soap that will be more appealing to your customers and more profitable for you?

FRITZSCHE *Brothers, inc.*

816 WEST 8TH STREET LOS ANGELES, CAL
Proprietors of PARFUMERIES de SEILLANS Seillans, France
FRITZSCHE BROTHERS, of Canada, Ltd., 77-79 Jarvis St., Toronto, Canada

PORT AUTHORITY COMMERCE BLDG.
76 NINTH AVENUE, NEW YORK, N. Y.
118 WEST OHIO ST. CHICAGO ILL

Colgate Buys Premiums

The largest purchase of premiums at the recent Exposition of National Premium Buyers in Chicago was made by Colgate-Palmolive-Peet Co., it was reported. The purchase consisted of 100,000 streamlined tea kettles with a value of somewhere between $90,000 and $100,000. They were purchased from the Rome manufacturing division of the Revere Copper & Brass Co.

Build Prison Soap Plant

Construction is to be started at once on a $26,000 soap plant at the Colorado state prison to provide employment for inmates. The plant will produce insecticide as well as soap, with the output to be used in the prison and in other state institutions. Under the Colorado law none of the products of the prison plant can be sold in competition with private industry.

Kentucky Taxes Soap

A twenty per cent tax on all soaps selling at over thirty cents a pound has just been adopted by the State of Kentucky in a revenue bill hastily jammed through the legislature in a surprise last-minute move. The new tax goes into effect July 1. The inclusion of toilet soaps in a bill dealing otherwise only with such preparations as cosmetics, creams, pomades, oils, dyes, etc. was fought aggressively by representatives of the soap industry, but at the last moment, when the final decisions were being made, soaps were included without any opportunity for a hearing or even for discussion in the legislature. The twenty per cent tax will apply on all soaps made within the state or imported into the state, except those selling at thirty cents a pound or less.

In Pennsylvania two other tax bills are pending which might affect the soap industry. One bill proposes a 5 per cent tax on retail sales of "luxuries", which are not defined. In the other bill, which is wholly a cosmetics tax bill on retail sales, common household and toilet soaps are exempted, *other than medicated soaps*. The difficulty lies in determining what is a medicated soap, and on the basis of experience elsewhere, a clearer definition is being sought by representatives of the industry.

Rules and regulations covering the Maryland tax, while not yet issued, are expected daily. In the meantime the Maryland Treasury Department has advised "that all soaps known by their general usage or which are advertised for toilet purposes are taxable while on the other hand household and laundry soaps are not taxable." The tax was effective April 1, 1936 at 10 per cent on retail sales prices.

Lever Soap Substitute

Lever Bros., Ltd., are reported to have acquired from I. G. Farbenindustrie of Germany world marketing rights to a new soap substitute. Research is now being pushed preliminary to active marketing of the new commodity which will necessarily compete with the general line of soaps now offered by Lever.

Give Free Soap Samples

Free samples of "Stork" castile soap are being distributed in the Chicago district by Luxor, Ltd., in a sales campaign currently being put behind this product. Handbills given with the free samples advise the mother on the proper method of bathing babies. The campaign is being tied in with "National Baby Week."

P & G Win Damage Suit

Procter & Gamble Co. received a decision in its favor in a damage suit brought recently by a resident of Halifax, Canada, charging that fumes from one of its laundry products rising from her washing machine caused her to lose her voice. A tin containing water and the P and G laundry preparation were brought into the Nova Scotia Supreme Court, at Halifax, to demonstrate that fumes from the mixture would not cause laryngitis. Heated to 168° F., the fumes were inhaled by Arthur Green, supervisor of chemical control at the Procter and Gamble factory, Hamilton, Ontario, as part of his evidence in the $10,000 damage suit. A. J. Rymes of Hamilton, assistant manager of the company, also took the stand to discredit the allegations that his company's product could cause throat irritation. The concentration of sodium hydroxide was not strong enough to cause laryngitis or any other throat trouble, he said. None of the workers at the factory who prepared the washing compound had ever complained of throat injury from exposure, he stated.

Caldwell with Arden

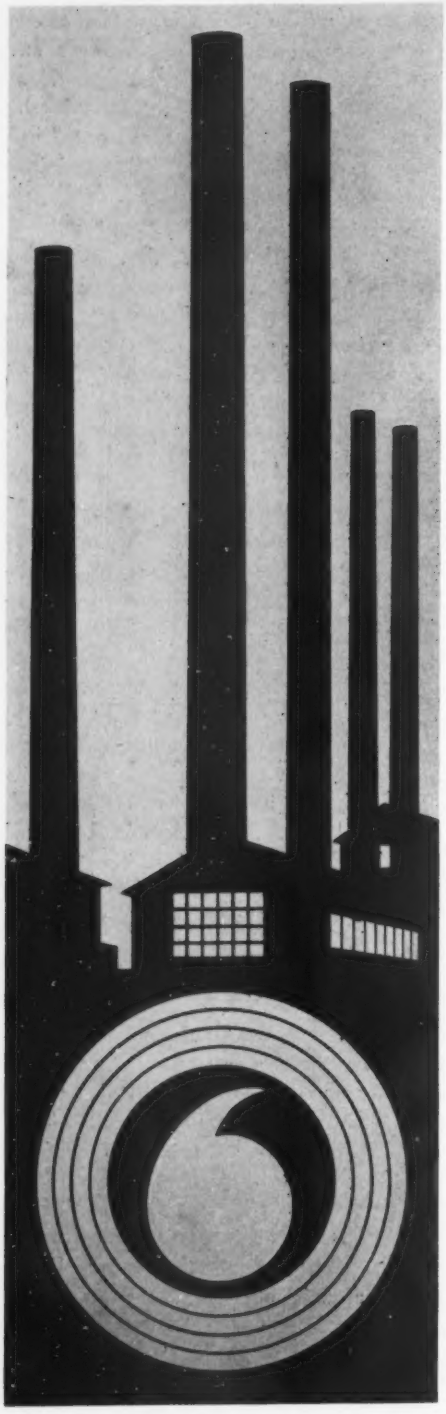
L. S. Caldwell, formerly general manager of Lightfoot Schultz Co., Hoboken, N. J., resigned this position recently and since May 25 has been with Elizabeth Arden, New York, as general manager of their wholesale division.

Consider Added Oil Taxes

Inclusion of a number of other oils and fatty acids in the group of vegetable fats subject to an excise tax is contemplated in the Bailey amendment to the tax bill now pending in the U. S. Congress. The Bailey amendment which was adopted by the Senate Committee calls for a 4½ cent tax on imports of inedible olive oil, olive oil foots, sesame, sunflower, kapok, hempseed and rapeseed oils as well as the fatty acids of these oils. It also would change the existing import duty of ½c per lb. on tallow to an excise tax of 3c per lb. Acceptance of the Bailey amendment would mean another large increase in the cost of soapmaking raw materials and many soap makers are accordingly fighting the proposal vigorously. It was expected that further amendments would be made on the floor of the Senate to strike out the proposed tax on olive oil in particular and others to strike out the entire Bailey amendment.

Colgate-Palmolive-Peet Co. is offering 20 free tours of Europe, leaving New York July 29 on the *S.S. Queen Mary*, in a contest featuring "Palmolive" soap.

TURNER



CAUSTIC POTASH

Turner Caustic Potash is especially adaptable for manufacturers of soaps, oil soaps, dry cleaning soaps and textile specialties. It is available in flake, solid or liquid form in containers of all sizes to meet your requirements. Try it on your next order.

CAUSTIC SODA

Turner Caustic Soda is manufactured by the pioneers of the chemical industry and is produced under a rigid system of control during its manufacturing process. Available in solid, flake or liquid form.

TRI-SODIUM PHOSPHATE

Turner T.S.P. is a brilliant white product. It is free flowing, quickly soluble, and will meet every cleanser requirement. For a superior product, Turner T.S.P. is an obvious first choice.

CARBON TETRACHLORIDE

A clear, sparkling product of highest purity, available for immediate delivery in any quantity. Users of Carbon Tetrachloride will find Turner the most reliable and convenient source of supply.

STEARIC ACID

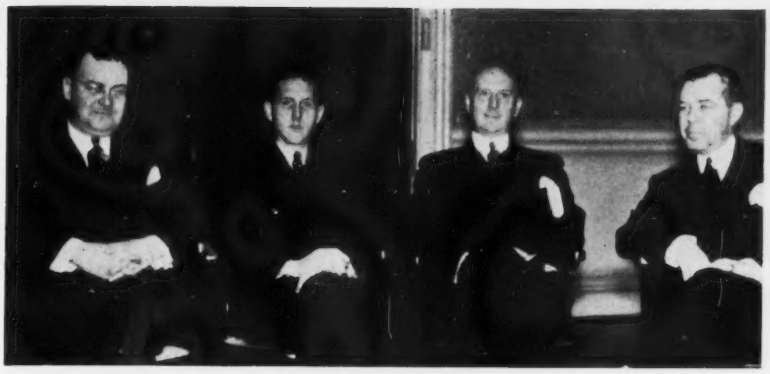
Users of Stearic Acid can depend upon Turner for purity and unvarying quality. Single, double or triple pressed available for prompt shipment. Join the list of successful manufacturers now using Turner Stearic Acid.

•

JOSEPH TURNER & CO.

500 Fifth Avenue, New York — 83 Exchange Pl., Prov., R. I.

SUPPLIERS OF CHEMICALS FOR OVER 70 YEARS



Naef executives: (left to right) Rupert C. Watson, general manager and treasurer of the American company; Andre Firmenich, vice-president; Fred Firmenich, president, and head of the Geneva firm of Firmenich & Co.; Alfred E. Dubey, Jr., vice-president.

Colgate Premium Offer

A special premium offer is currently being made by Colgate-Palmolive-Peet Co. in the Pittsburgh territory, and is being featured in C-P-P newspaper advertising in that district. The campaign was originally scheduled to open earlier, but had to be delayed as a result of the disastrous floods in that area.

Houbigant Sales Contest

In a contest designed to promote sales of its "Fougere Royale" shaving soap, Houbigant Sales Corp., New York, is offering $250 in prizes for the best pieces of verse, prose or cartoons describing this product.

Make Rosin Survey

The annual survey of the U. S. Department of Agriculture relative to production and consumption of rosin and turpentine is now in progress. Users are asked to report total stocks on hand as of March 31. Questionnaires are to be mailed to the Bureau of Chemistry and Soils, U. S. Dept. of Agriculture, Washington. Any user who has not received a questionnaire is asked to write for one promptly. No individual figures are to be made public.

Warns on Contaminated Corks

Precautions against the peril of flood-contaminated corks is urged by the American Star Cork Co., Brooklyn, as a check against the danger of impurities infiltrated into corked products, while submerged or touched by the recent overflows. In issuing this warning, the American Star Cork Co. announced its readiness to reprocess quantities of corks supplied by that company in the case of lots which have been affected by the floods.

New London Plant for Arden

Elizabeth Arden is establishing a factory in London for the manufacture of "Elizabeth Arden" stage and screen makeup. At present this product is being imported into Great Britain from Hollywood, Cal. The new move is designed to cut expenses. Advertising will be confined to popular motion picture magazines.

Soap Perfumes

The production of Indian essential oils, particularly vetivert and palmarosa, has increased as a result of the rapid growth of the soap industry in India. The quality of the oils has also improved and export trade is being solicited. N. G. Chatterji, *Manufacturing Chemist*, 7, 92, (1936).

L. A. Chiris on U. S. Visit

Leon A. Chiris, head of Etablissements Antoine Chiris of Grasse, France, arrived in New York on the *S. S. Normandie* May 11th. He was accompanied by Jean Gondran, manager of the Grasse factory of Etablissements Antoine Chiris. Both expected to spend a few weeks studying American economic conditions and visiting the many friends of the House of Chiris.

Form Naef U. S. Company

Fred Firmenich, president of Firmenich & Cie., Geneva, Switzerland, manufacturers of aromatic chemicals and perfuming specialties, announced the establishment of an American branch company on May 15 with offices and laboratories at 135 Fifth Ave., New York, to be known as Firmenich & Co., Firmenich & Cie. are successors to the Swiss house of Chuit, Naef & Cie., known widely in the American market as Naef. The firm was established in Geneva in 1895. The newly established company will act as exclusive sales agents in the United States for all Naef products. Ungerer & Co., New York, were formerly American sales agents for Naef, their representation dating back over forty years to the founding of the firm. The establishment of their own branch companies represents a new sales policy which is being pursued by the Firmenichs in all parts of the world.

Rupert C. Watson, formerly associated with Ungerer & Co. in the sale of Naef products, is general manager of the new branch, and vice-president and treasurer of the new company. Alfred E. Dubey, Jr., also formerly of Ungerer & Co., is vice-president and secretary. Both men are well-known in the American trades. Fred Firmenich, president of the parent firm, is also president of the American corporation. Andre Firmenich, son of the head, is a vice-president of the American company. The parent company conducts its manufacturing in Geneva in charge of Dr. Roger Firmenich, another son of the president. The firm now has its own branch houses in Paris, London, Berlin, Barcelona, and Buenos Aires, in addition to the New York company.

Weicker, Squibb Chairman

Theodore Weicker, associated with E. R. Squibb & Sons, New York, for thirty-two years, has been elected chairman of the company's board. Carleton H. Palmer has been re-elected president.

HEAVY CHEMICALS

TRISODIUM PHOSPHATE

SODIUM SILICATE **SODIUM FLUORIDE**
SALT CAKE **NITRE CAKE**
GLAUBER'S SALT **SULPHURIC ACID**

And Other Heavy Chemicals of Standard Purity

PRODUCTS of standard quality and uniformity packaged for safety in transit, stocked at strategic points and shipped to reach you at the lowest transportation cost —are these not reasons for decided preference? Your inquiry, by 'phone, wire or mail, will receive prompt and intelligent attention at the Company office nearest you.

GENERAL CHEMICAL COMPANY
Home Office: **40 Rector Street, New York, N. Y.**

Cable Address: **LYCURGUS, N. Y.**

Sales Offices: Atlanta, Baltimore, Boston, Buffalo, Charlotte, Chicago, Cleveland, Denver, Kansas City, Los Angeles, Minneapolis, Philadelphia, Pittsburgh, Providence, San Francisco, St. Louis, Seattle

In Canada: The Nichols Chemical Company, Limited, Montreal, Toronto

Also **BAKER & ADAMSON C. P. Acids, Laboratory Reagents and Fine Chemicals**

Present Watch to McCartney

Three hundred members and guests turned out for the Spring Party of the Chicago Drug and Chemical Association at the Lake Shore Athletic Club on May 7th. Dancing and an unusually good floor show followed the dinner. One of the features of the evening was the presentation of a wrist watch to Frank L. McCartney, the retiring president. The next luncheon meeting of the association was scheduled for May 28th. The program committee announced that the speaker for the meeting was to be D. M. Ladd of the Federal Bureau of Investigation. Mr. Ladd has been in charge of the New Orleans, St. Louis and St. Paul offices of the Bureau and has worked on many famous cases such as the Bremer kidnapping case and the Dillinger case.

Gives Free $1 Bills

A house-to-house campaign introducing "Magic Washer" a product of Iowa Soap Co. is currently being conducted in Terre Haute, Ind., in which representatives of the company have been distributing $1 bills to housewives found to have a package of the new product in their homes at the time of the call.

A. W. Mudge Returns to Duty

Arthur W. Mudge, treasurer of Aromatic Products, Inc., New York, perfuming material manufacturers, returned to his work the middle of last month following a serious illness. Mr. Mudge went to Miami early in March for a short vacation, was taken ill while there and spent the ensuing six weeks in a Miami Beach hospital.

Dr. Keller in U. S.

Dr. K. T. Keller, production manager for Schimmel & Co., A. G., Miltitz-Leipzig, Germany, has been in New York for several weeks, making his headquarters with Schimmel & Co., of which his brother, G. Keller, is general manager. Dr. Keller expects to remain in New York until about the end of June before returning to Germany.

Oil Trades Golf Outing

The annual sports outing of the Oil Trades Association of New York will be held on Tuesday, June 16, at the Pelham Country Club, Pelham Manor, N. Y. Members will play in two classes in the golf tournament, with guests competing in a special division. There will also be the usual Kickers' Handicap. A baseball game is included in the afternoon program. Albert J. Squier is chairman of the entertainment committee, other members being Philip C. Meon, Clifford T. Weihman and Jos. C. Smith. Those desiring to make the trip to the club in the bus provided by the association should make reservation promptly with Philip C. Meon, 17 Battery Place, New York.

German Fat Substitutes

Reports from Germany indicate that with the soap industry there facing a shortage of fats, new and unusual substitute materials are being investigated. Grape seed oil has been found to be an acceptable raw material for use in soap production, the oil being obtained from the skins and seeds of the grape. Owing to the scope of the domestic wine industry it is thought in Germany that this source can be made to yield important quantities of oil. Another industrial innovation in Germany is the production of synthetic fatty acids from coal. The first plant for producing this material is to be constructed at Witten, in the Ruhr region, and its output will be consumed in the German soap industry.

Grasselli Moving Office

The main office of Grasselli Chemical Co., Cleveland, subsidiary of E. I. du Pont de Nemours & Co., is in process of being moved to Wilmington as the company's answer to recent changes in the federal tax laws which no longer permit companies to consolidate for tax purposes the income of their subsidiaries. The move will be a gradual one and will not be completed until late summer. The Cleveland plant will not be affected by the change.

New Antiseptol Shampoo

Antiseptol Company, Chicago, is now marketing a new shampoo concentrate. The new product, which bears the trade name *Marveloks*, is a castile-type shampoo. At present *Marveloks* is packed only in one gallon bottles which will make from two to four gallons of shampoo depending upon the concentration desired.

Testimonial to Magnus

Percy C. Magnus, of Magnus, Mabee & Reynard, Inc., New York, president of the New York Board of Trade, was the guest of honor at a testimonial luncheon at the Banker's Club, New York, recently. Mr. Magnus delivered a short address entitled "A Hand on the Oar".

Defend Wool Grease Process

Bopf-Whittam Corp., Westfield, N. J., has just been successful in securing an order from the New Jersey courts restraining Michael Gutowski, trading as the Genuine Chemical Works, Elizabeth, N. J., from refining wool greases by a process claimed by the plaintiff. Bopf-Whittam Corp. claims that the process being used by Gutowski is its exclusive property.

Amend Denaturing Rules

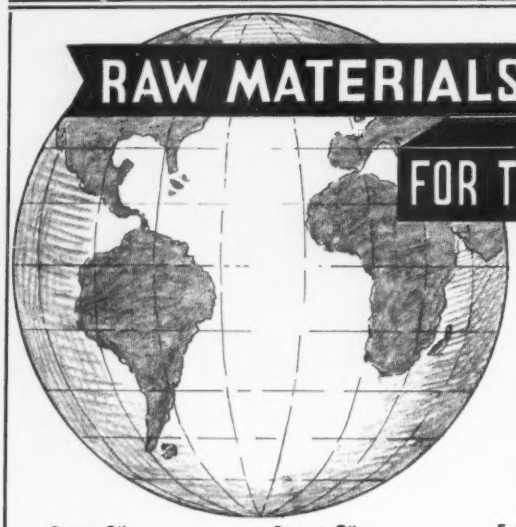
U. S. Customs regulations governing the denaturing of imported vegetable oils—olive, palm-kernel, rapeseed, sunflower-seed, and sesame—have been amended to permit the use of linalool and of ho oil as denaturants in the proportion of 100 ounces to 100 gallons of oil.

John F. Murray Dies

John F. Murray, director and treasurer of the American Home Products Corp., New York, died May 9 at his home in Roslyn, Long Island, at the age of sixty-four, succumbing to a heart ailment from which he had suffered for some time.

Kammer to Return Shortly

A. F. Kammer, vice-president and sales manager of Carr-Lowrey Glass Co., Baltimore, is expected to return early next month from an extended European trip.



RAW MATERIALS FOR THE SOAP INDUSTRY FROM ALL PARTS OF THE WORLD

OLIVE OIL
OLIVE OIL FOOTS

WHEN purchasing raw materials for your finished products consult our well established line, and obtain your requirements from a supplier whose reputation is of long standing.

Castor Oil
Cocoanut Oil
Corn Oil
Cottonseed Oil
Palm Oil
Palm Kernel Oil
Peanut Oil
Perilla Oil
Rapeseed Oil
Sesame Oil
Soya Bean Oil
Teaseed Oil
Fatty Acids
Lard Oils
Neatsfoot Oil
Oleo Stearine
Stearic Acid
White Olein
Tallow
Grease
Lanolin
Caustic Soda
Soda Ash
Caustic Potash
Carbonate Potash
Sal Soda
Modified Soda
Silicate Soda
Metasilicate
Tri Sodium Phosphate
Di Sodium Phosphate
Chlorphyll
"CEREPS" Superfatting Agent

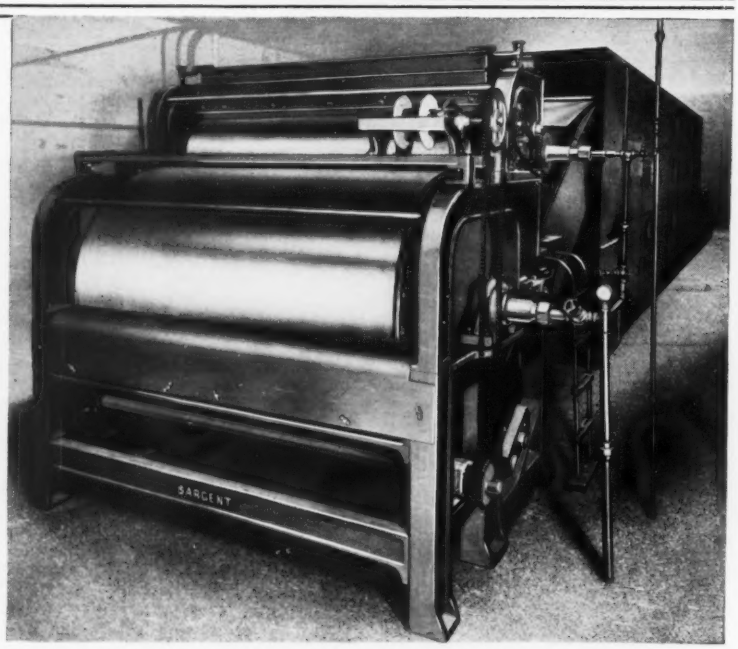
WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET, NEW YORK CITY

Established 1838

New!..

a Soap Chilling Roll and Drying Machine



AS the title indicates, the Rolls are NEW and the entire machine is NEW, many valuable improvements having been perfected until this latest Sargent development is now one of the very finest Rolls obtainable.

To the soap manufacturer, the most important angle is to have a *thin, uniform chip* . . . readily accomplished by these new Rolls being expertly machined, ground and set. Finest grade of cast iron. Vari-speed controls on both Rolls insures easy adjustment . . . every part accessible. Drive improvements reduce the horsepower used. Changes made at a minute's notice. The Dryer is entirely re-designed. Its housing gives better insulation and cuts down steam consumption per hour. Other valuable changes have been made in the circulating and exhaust air systems . . . and all *fans* are *direct motor driven.*

C. G. SARGENT'S SONS CORP. GRANITEVILLE MASS., U. S. A.

Set Canadian Wages

Wages paid to female employees engaged in plants devoted to manufacture of soaps, toilet preparations, etc., in the Montreal, Canada, area were fixed in a recent ruling by Gustave Francq which will go into effect July 6. The new law provides that 20 per cent of the employees in a factory will not get less than 15 cents per hour; 15 per cent not less than 19 and the remainder will receive 23 cents an hour. This wage schedule will apply to the island of Montreal and within a radius of 20 miles beyond this territory the new order decrees that 20 per cent of the employees will not receive less than 13 cents per hour; 15 per cent not less than 17 cents and the remainder will be paid a minimum of 21 cents. The new law limits the working week to 55 hours and beyond that the employee will get time and a half.

Reckitt's Profits High

Net profits of Reckitt & Sons, Ltd., British manufacturer of disinfectant, polishes, bath salts, laundry blue, etc., for the past year are reported as £1,161,573. Dividend on the ordinary shares for the seventh year in succession is being maintained at 22½ per cent. The ordinary £1 shares in this concern are now quoted at £5 15s.

Ungerer Sails for France

Fred Ungerer, head of Ungerer & Co., New York, essential oils and perfuming materials, sailed from New York May 12th on the *S. S. Normandie*. He planned to be gone about six or seven weeks, visiting France and Switzerland.

Naugatuck Booklet

Naugatuck Chemical Co., New York, has just published a new illustrated booklet under the title "Naugatuck Aromatics." Descriptions and prices are given of the products of the three firms it represents in United States, Bruno Court, Grasse, France; Laboratories Louis Bornand, Neuilly-sur-Seine, France; and Compagnie Africaine des Plantes a Perfum, Casablanca, Morocco.

Contracts Awarded

Treasury Soap Awards

Awards have been made as follows in a bidding for supplies opened by the U. S. Treasury Department: 12,000 lbs. scouring compound, Armour & Co., 1.12c; 3,000 lbs. auto soap, Crystal Soap & Chem. Co., 4.35c; 80,000 lbs. soda ash, B. J. Howard, 1.14c; 20,000 lbs. grit soap, Day & Frick, 2.1c cake; 135,000 cakes laundry soap, Armour & Co., 3.12c cake; and 80,000 lbs. laundry soap, Iowa Soap Co., 5.57c lb.

Marine Corps Awards

In a bidding opened recently by the U. S. Marine Corps, Philadelphia, the following bids have been recommended for acceptance: Kirkman & Son, Brooklyn, 12,000 lbs. toilet soap, 6.57c; R. M. Hollingshead Corp., Camden, N. J., 14,000 lbs. paste soap, 4.79c; and Swift & Co., Philadelphia, 50,000 lbs. laundry soap, 2.87c.

Jeffersonville Soap

Procter & Gamble Distributing Co. has been awarded a contract by the Jeffersonville U. S. Army Quartermaster covering 120,000 lbs. laundry soap at a price of 3.21c. Hunnewell Soap Co., Cincinnati, awarded 8,330 cakes grit soap at 2c.

Soda Ash to Stevens

Stevens Soap Corp., Brooklyn, has been awarded a contract covering 20,000 lbs. soda ash for Springfield Arsenal, Mass., at a price of 1.62c per lb.

Post Office Soap Bids

The following low bids were entered in a recent opening announced by the U. S. Post Office Department, Washington, D. C.; on 450 dozen cakes grit soap, John T. Stanley Co., New York, with a bid of 2.25c; on 20,000 lbs. toilet soap, Iowa Soap Co., Burlington, 4.9c; on 103,200 lbs. laundry soap, Kirkman & Son, Brooklyn, 2.69c.

Chicago Soap Awards

Samuel M. Sher Co., Chicago Heights, Ill., has recently been awarded a contract by the Chicago U. S. Army Quartermaster covering 212,000 lbs. laundry soap at a price of 3.15c. John Sexton & Co., Chicago, awarded 8,000 cakes grit soap at 1.65c. Iowa Soap Co., Burlington, Iowa, awarded 4,300 cakes toilet soap at 2.33c. Swift & Co., Chicago, awarded 300 cans scouring powder at 2.27c.

Jeffersonville Soap Bids

The following low bids were entered on various soap items in a recent opening by the Jeffersonville U. S. Army Quartermaster: on 51,000 lbs. laundry soap, Armour & Co., Chicago, 3.28c; 2,025 lbs. laundry soap, Armour & Co., 3.38c.

Insecticide Award

A contract for 330 gals. insecticide has recently been awarded to Consolidated Drug Corp., New Orleans, by the U. S. Army Quartermaster at Camp Beauregard, La., at a price of 58c.

Chicago Soap Awards

The Chicago U. S. Army Quartermaster has awarded a contract covering 120,000 lbs. laundry soap to Iowa Soap Co. at a price of 3.2c per lb. John Sexton & Co. awarded 6,000 cakes of grit soap at 1.625c.

Philadelphia Naphthalene

Contract has just been awarded to Harshaw Chemical Co., Philadelphia, covering 20,000 lbs. naphthalene at a price of 6¾c per lb.

J. B. Williams Co., Glastonbury, Conn., shaving cream and toilet preparations, has appointed J. Walter Thompson Co., New York, to direct its advertising account, effective June 1.

GERANIOL for SOAP

In various grades to meet every requirement as to price

•

A. M. TODD COMPANY

KALAMAZOO, MICH.

Business established in 1869

RAW MATERIALS

ALCOHOL
AMMONIA
BLEACHING POWDER
BORAX
BICARBONATE OF SODA
CALCIUM CHLORIDE
CARBON TETRACHLORIDE
CAUSTIC SODA
CAUSTIC POTASH
DYES
DISODIUM PHOSPHATE
GLAUBERS SALTS
GLYCERINE
METASILCATE
OXALIC ACID
POTASSIUM CARBONATE
SAL AMMONIAC
SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM PHOSPHATE

iEi

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Check over our list of raw materials and have us quote on your requirements.

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CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID-RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
ROSIN
SALAD OIL
SOYA BEAN OIL
SESAME OIL
TEASEED OIL
WHITE OLEINE
FATTY ACIDS
STEARINE
STEARIC ACID
GREASE
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VEGETABLE OILS, ANIMAL OILS, FATS, CHEMICALS

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OLIVE OIL FOOTS • OLIVE OIL

New Trade Marks

The following trade-marks were published in the May issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

BATH BALL—This in solid letters with silhouette of woman describing soaps. Filed by Kerk Guild, Inc., Utica, N. Y., Sept. 10, 1935. Claims use since June 28, 1935.

LITE—This in heavy reverse script on package describing cleanser. Filed by Lite Soap Co., Aurora, Ill., Feb. 28, 1936. Claims use since Nov. 25, 1935.

DARSUN—This in shaded letters with sketch of crown describing water softener and cleanser. Filed by Gramercy Chemical Co., New York, Feb. 20, 1936. Claims use since March, 1935.

CARIOCA — This in reverse against circular background carrying drawing of woman dancer, describing shoe polishes. Filed by Carioca Mfg. Co., Philadelphia, Nov. 21, 1935. Claims use since Oct. 2, 1935.

VIKING—This in solid letters with sketch of Viking describing dairy cleanser. Filed by Los Angeles Soap Co., Los Angeles, Mar. 14, 1936. Claims use since Feb. 12, 1936.

AU-BE—This in solid letter describing antiseptic. Filed by Aube Laboratories, Glen Cove, N. Y., Feb. 19, 1936. Claims use since Jan. 20, 1936.

ACTO—This in solid letters describing liquid soaps and oil soaps. Filed by Du Bois Soap Co., Cincinnati, Aug. 20, 1934. Claims use since October, 1923.

VIVO—This in shaded letters describing cleanser. Filed by Vivo Chemical Co., Beaver Falls, Pa., Jan. 22, 1936. Claims use since Sept. 12, 1935.

ANHYDRO-ASH—This in broken letters describing cleaning compound. Filed by Chrisman Supply Co., Fayetteville, N. Y., Feb. 3, 1936. Claims use since Apr. 28, 1933.

POROFOS—This in solid letters describing detergents. Filed by General Chemical Co., New York, Mar. 3, 1936. Claims use since Nov. 19, 1935.

NACCONAL—This in solid letters describing detergent. Filed by National Aniline & Chemical Co., New York, Mar. 3, 1936. Claims use since Oct. 5, 1932.

FUMOL—This in solid letters describing insecticides, germicides and disinfectants. Filed by Fumol Corp., New York, Mar. 8, 1935. Claims use since November, 1931.

KOLSTEROL—This in solid letters describing antiseptic germicidal solution. Filed by Kolsterol, Inc., Detroit, Mar. 2, 1936. Claims use since Oct. 17, 1935.

WAY-CO—This in solid letters describing antiseptic powder. Filed by Way-Co Co., Baltimore, Mar. 3, 1936. Claims use since June, 1921.

"DUDE"—This in solid letters with sketch of Boston bull terrier describing dog shampoo. Filed by Pet Products Co., Indianapolis, Mar. 11, 1936. Claims use since Jan 1, 1934.

TRANSOTE—This in script describing insecticide and fungicide. Filed by Reilly Tar & Chemical Corp., Indianapolis, Mar. 21, 1936. Claims use since Dec. 20, 1935.

OXO-BORDEAUX—This in solid letters describing agricultural insecticide. Filed by Ansbacher-Siegle Corp., Brooklyn, Mar. 24, 1936. Claims use since Mar. 26, 1932.

CLENZ GLEEM—This on reverse plate describing cleaning preparation. Filed by Rieck & Johnston, Tyler, Texas, Dec. 20, 1935. Claims use since July 12, 1935.

SPICK—This in solid letters describing shoe cleaner. Filed by Knomark Mfg. Co., Brooklyn, Mar. 27, 1936. Claims use since Mar. 17, 1925.

PYRO EAZ—This in solid letterms describing dentrifrice. Filed by M. V. Staton, Warren, Ohio. Dec. 17, 1934. Claims use since June 1, 1932.

D'ORIEN—This in solid letters describing shampoo. Filed by Harley Soap Co., Philadelphia, Dec. 6, 1935. Claims use since Jan. 1, 1933.

GOLDEN GLINT—This on rereverse plate with sketch of girl describing shampoo. Filed by Golden Glint Co., Seattle, Feb. 10, 1936. Claims use since Feb. 7, 1935.

PRE-T-SOFT — This in solid letters describing water softener. Filed by Bidwell Wholesale Grocery Co., Pittsburgh, Mar. 13, 1936. Claims use since Nov. 15, 1935.

SENTINEL—This in solid letters describing insecticides, deodorants, etc. Filed by Sentinel Laboratories, Chicago, Mar. 14, 1936. Claims use since Feb. 6, 1936.

MERCUROCROMO—This in solid letters describing antiseptic and germicide. Filed by Hynson, Westcott & Dunning, Inc., Baltimore, Mar. 25, 1936. Claims use since January, 1926.

DRI-CHLOREZ — This in solid letters describing bleach, disinfectant, germicide, etc. Filed by Chlorez Co., St. Louis, Mar. 28, 1936. Claims use since Feb. 26, 1936.

TROPICAL NIGHT — This in solid letters describing toilet soaps and shaving cream. Filed by Shulton, Inc., New York, Feb. 26, 1936. Claims use since Feb. 18, 1936.

TWENTY GRAND—This in solid letters describing shaving cream. Filed by Twenty Grand Blade Co., Spencer, Ind., Mar. 4, 1936. Claims use since Feb. 27, 1936.

B. T. D.—This in outline letters with word "Dow" in diamond, describing disinfectants. Filed by Dow Chemical Co., Midland, Mich., Oct. 21, 1935. Claims use since May 22, 1935.

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ALWAYS AVAILABLE from a DEPENDABLE SOURCE . . .

● **GUMS**
Cleaned, sorted and milled in our Jersey City plant.

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Sunbleached, superior white and refined.

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Pure White and Yellow.

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Cosmetic grade. High absorbing qualities.

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Triple pressed, saponified. Low iodine number. Always uniform.

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The Lanolin absorption base. Total Cholesterin content of 8-9%. Balance is composed entirely of other derivatives of Adeps Lanae.

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French process, from Societe des Mines et Founderies de Zinc de la Vieille Montagne.

● **ISCO Silver Talc**
Dependable for uniform whiteness, consistent firmness. Correct lustre. Slip, without shine. You cannot buy better.

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KRANICH SOAPS

LIQUID SHAMPOO BASE
Coco Oil 60%
Olive Oil 60%
Natural, Opal, Green

LIQUID SOAPS
Coconut, 10%-15%
20%-40% Concentrate
Colored and Perfumed

SCRUBBING SOAPS
Pine-Sassafras
Plain

LIQUID SHAMPOOS
Coconut Oil-30%-45%
Olive Oil-30%
Castile-30%

POWDERED SOAPS
Castile U.S.P.
Coco Castile 50-50
Pure Coconut
Pure Palm

POTASH SOAPS
Soft and Hard
U.S.P. 9th and 10th

HARD AUTO SOAPS

Kranich Standard Soaps are manufactured and produced entirely in our own factory. All our oils and fats are processed and purified before use. All alkalies are dissolved and settled to remove impurities. All our processes are technically supervised and a chemical analysis made on all finished products to assure satisfaction to our trade.

KRANICH SOAP CO., Inc.
54-60 RICHARDS ST., BROOKLYN, N.Y.

Trade Marks Granted

334,285. Floor Wax. Uncle Sam Chemical Co., New York. Filed October 1, 1934. Serial No. 356,649. Published Feb. 18, 1936. Class 16.

334,348. Antiseptic and Germicide. Parke, Davis & Co., Detroit. Filed December 2, 1935. Serial No. 372,179. Published February 11, 1936. Class 6.

334,371. Drain Opener. Purex Corp., Los Angeles. Filed November 13, 1935. Serial No. 371,501. Published February 11, 1936. Class 6.

334,390. Dog Shampoo. Walter G. Legge, New York. Filed December 5, 1935. Serial No. 372,282. Published February 25, 1936. Class 6.

334,399. Liquid Insecticide. Thomas L. Cunningham, New York. Filed December 24, 1934. Serial No. 359,620. Published February 18, 1936. Class 6.

334,508. Shoe Polish. Louangel Corp., New York. Filed December 31, 1935. Serial No. 373,221. Published February 18, 1936. Class 4.

334,517. Mixture for Repelling Rodents. Gustavus J. Esselen, Inc., Boston. Filed December 28, 1935. Serial No. 373,133. Published February 18, 1936. Class 6.

334,522. Dentifrice. Thyrole Chemical Co., Philadelphia. Filed December 4, 1935. Serial No. 372,260. Published February 25, 1936. Class 6.

334,589. Drain Pipe Openers. Drain-King Corp., Chicago. Filed November 11, 1935. Serial No. 371,417. Published February 25, 1936. Class 6.

334,658. Wax Polishes, Automobile and Furniture Polishes. Cochran Co., Cleveland. Filed June 29, 1934. Serial No. 353,320. Published March 3, 1936. Class 16.

334,661. Laundry Sour and Disinfectant. Merchants Chemical Co., New York. Filed August 13, 1935. Serial No. 368,264. Published February 18, 1936. Class 6.

334,688. Vermicide. Tennessee Eastman Corp., Kingsport, Tenn. Filed December 30, 1933. Serial No. 345,522. Published February 25, 1936. Class 6.

334,714. Shaving Cream. Hamlins Wizard Oil Co., Chicago. Filed November 3, 1934. Serial No. 357,859. Published July 16, 1935. Class 4.

SOAPS

In the Tannery

The part which soaps and oils play in the tanning and finishing of leather,—the type and composition of the soaps most suitable,—and those unsuitable,—a discussion of the place of soaps in the tannery in the July issue of SOAP.

334,781. Preparation for Killing Ants. Buckeye Chemical & Specialty Co., New York. Filed October 21, 1935. Serial No. 370,604. Published February 25, 1936. Class 6.

334,893. Varnish Sealer. American Crayon Co., Sandusky. Filed January 6, 1936. Serial No. 373,350. Published March 10, 1936. Class 16.

334,897. Solvent and Cleaner. Motor Fume Utilizer Corp., Long Island City, N. Y. Filed January 3, 1936. Serial No. 373,314. Published March 10, 1936. Class 4.

334,902. Household Cleanser. L. Klein, Inc., Chicago. Filed January 2, 1936. Serial No. 373,258. Published March 3, 1936. Class 4.

334,909. Dishwashing Compounds. Pioneer Chemical & Manufacturing Co., Cleveland. Filed January 13, 1936. Serial No. 373,592. Published March 3, 1936. Class 4.

334,921. Metal Polish. Victor Supreme Metal Polish Co., West New York, N. J. Filed December 30, 1935. Serial No. 373,189. Published March 10, 1936. Class 4.

334,931. Boiler Cleaner. Utility Laboratory, Inc., Brooklyn. Filed January 8, 1936. Serial No. 373,469. Published March 3, 1936. Class 6.

334,936. Antiseptic and Spermicides. E. R. Squibb & Sons, New York. Filed January 9, 1936. Serial No. 373,506. Published March 3, 1936. Class 6.

334,965. Shampoo. Avol Laboratories, Boston. Filed November 4, 1935. Serial No. 371,138. Published February 18, 1936. Class 6.

334,995. Toilet Bowl Cleaners. Red Head Products, Inc., Cedar Rapids, Iowa. Filed January 21, 1935. Serial No. 360,478. Published March 3, 1936. Class 4.

335,039. Toothpowder. King Products Co., Van Wert, Ohio. Filed January 24, 1936. Serial No. 374,051. Published March 10, 1936. Class 6.

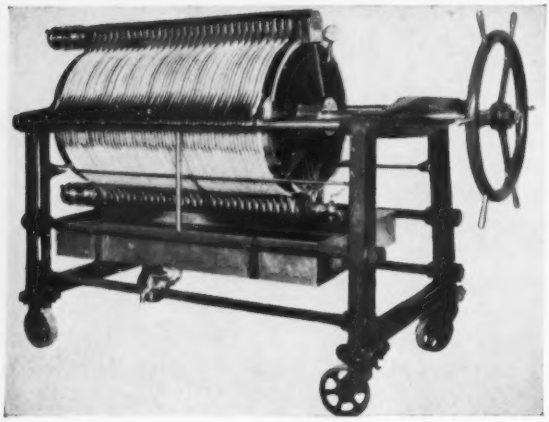
Check Soap Promoter

Action has recently been taken by the U. S. Federal Trade Commission against L. W. Gibson, 4700 North Racine Ave., Chicago, for unfair competition in the sale of soaps, polishing compounds, tooth paste, cosmetics, exterminating products and other preparations. Among the alleged misrepresentations are assertions by Gibson that he was educated in chemistry and has spent large sums of money and devoted years to perfecting formulas and processes for the manufacture of various products. The complaint also charges the respondent represents that in his establishment are laboratories equipped with modern apparatus, and that associated with him are graduates of leading American colleges whom he employs because of their knowledge of chemistry, their experience in the formation of money-making formulas, their success as manufacturers, and their ability to teach other manufacturers every phase of profitable production. Gibson has been given until May 22nd by the Commission to show cause why a cease and desist order should not be issued.

Offer New Glass Resin

A new glass-like resin is being marketed under the names "Perspex" and "Diakon" by Imperial Chemical Industries, London, for use in production of cosmetic containers. It was first shown at the recent British Industries Fair and since that date has attracted increasing attention both in England and in United States.

HAVE YOU A CLOUDY LIQUID SOAP?



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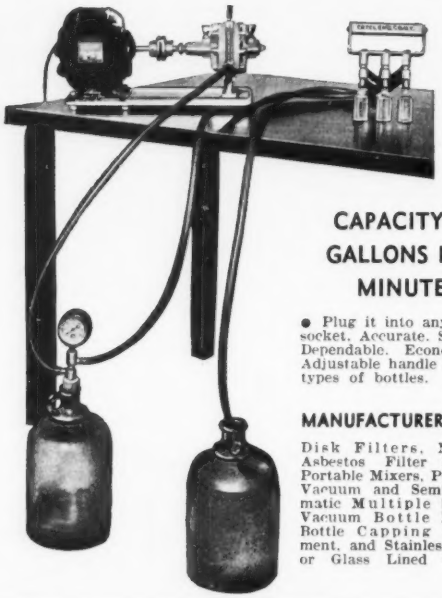

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Disk Filters, Neutral Asbestos Filter Sheets, Portable Mixers, Portable Vacuum and Semi-Automatic Multiple Spout Vacuum Bottle Fillers, Bottle Capping Equipment, and Stainless Steel or Glass Lined Tanks.

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CHARLES FISCHBECK CO., INC.

119 WEST 19TH ST. NEW YORK CITY

Raw Material Markets

(*As of June* 1, 1936)

NEW YORK—Attention in the market for soap and disinfectant chemicals this month was centered on several important new developments which may have considerable bearing on raw material costs over the coming year. Of primary importance is the new amendment to the U. S. revenue bill proposed by Senator Bailey which would fix an excise tax of 4½c per lb. on inedible olive oil and olive oil foots and a tax of 3c per lb. on imports of tallow. Up to this point soap makers who have been using olive oil in their formulas have been favored in comparison with the users of coconut and palm oils, but if the Bailey amendment goes through, the shoe will decidedly be on the other foot. Not only would the makers of olive oil castile soap be affected by the adoption of the Bailey amendment, but manufacturers of textile soaps as well would experience a sharp advance in their raw material costs. As this issue closes, preparations are being made in Washington by those whose interests are most affected to put up a sharp fight against adoption of the Bailey amendment or at least to eliminate olive oil from the new group of oils, fats and fatty acids to be taxed.

Another important development during the period was the announcement of new import duty rates on essential oils and perfuming materials as they will be changed under the new Franco-American trade agreement. While many oils are on the free list now, there are others such as clove, patchouli, sandalwood, and many of the compounds which have been paying substantial import duties. These rates will be halved under the new agreement which will go into effect June 15.

FATS AND OILS

An unusual set of conditions has obtained in the oil and fat markets over recent weeks. With so much uncertainty existing as to the fate of certain products in the contemplated additions to the list of oils subject to an excise tax, many oil and fat buyers have stepped to the sidelines and declined to make further commitments until the situation clears up somewhat. The result has been an absence of buyers and a series of price declines in various oils in the local market. Where two years ago there was a rush to lay in stocks and to partially process oils in an attempt to beat the imposition of the tax, this time the soap trade seems to feel that this game is not worth trying.

Coconut Oil

Tanks of Manila oil are quoted currently in the New York market at 4⅛c per lb., a drop of ⅜c per lb. from the price level of a month ago. Consumers were inclined to play a waiting game and the market was reported quiet.

Olive Oil

There were reports of a better inquiry for denatured oil, with a moderate rise in quotations, but apparently little business was done. The current market level is 74 to 75c per lb. in most quarters, although some sellers are asking as high as 80c. No one seems to know just what to expect and there is little tendency to make commitments until the situation is clarified.

Stearic Acid

There was a reduction of ½c per lb. this period on stearic acid and one of the same amount on red oil.

Tallow

Tallow prices dropped 1½c per lb. this period, bringing the city extra grade down to 4⅛c per lb. Greases also dropped sharply, with house and yellow grades now quoted at 3⅜ to 3½c per lb., a drop of 1⅜c from the price quoted a month ago.

PERFUMING MATERIALS

Aromatics

Competitive forces continued to rule the market for aromatic perfuming materials this period, with several new price reductions being announced. Among the products to be quoted lower this period were citronellol, geraniol and methyl anthranilate.

Bergamot Oil

There was a sharp advance in the price of bergamot oil this period, laid to the higher price which has been placed on oil for shipment from Italy by the Italian Bergamot Consortium. The victory of the Italian forces in Ethiopia is expected to mean a relaxation soon in the sanctions which have restricted international trade in this oil over recent months.

Citronella Oil

Lower shipment prices on Ceylon oil have made it possible for importers to offer additional reductions in the local market, with the market now ranging from 18 to 19c per lb.

Lemongrass Oil

With another drop in shipment quotations on lemongrass, sellers in the local market announced a reduction in prices which brings the current quotations down to a basis of 45 to 50c per lb.

MISCELLANEOUS

Cresylic Acid

Another advance was reported in quotations on cresylic acid this period as demand continued to outrun supplies and the shortage of supplies both here and abroad continued. The market is now 63 to 65c per gal., with low boiling oil quoted 10c per gal. higher.

ABC

CRESYLIC ACID
AROMATICS

PHENYL ETHYL ALCOHOL
GERANIOL
CITRONELLOL
ACETOPHENONE
BENZYL ACETATE
BENZYL ALCOHOL
BENZOPHENONE
AMYL CINNAMICALDEHYDE

For Soaps, Perfumes, Cosmetics, etc.

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ASSOCIATED COMPANIES
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MACNAIR-DORLAND CO., INC.
Publishers
254 W. 31st STREET NEW YORK

Raw Material Prices

(As of June 1, 1936)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .11	$ .12½
Acid. Boric, bbls., 99½%	ton	95.00	100.00
Cresylic, drums	gal.	.63	.65
Low boiling grade	gal.	.73	.75
Oxalic, bbls.	lb.	.11½	.12¼
Adeps Lanae, hydrous, bbls.	lb.	.16	.18
Anhydrous, bbls.	lb.	.17	.19
Alcohol, Ethyl, U. S. P., bbls.	gal.	4.13	4.25
Complete Denat., SD 1, drums, ex.	gal.	.33	.43
Alum. Potash lump	lb.	.03¼	.03½
Ammonia Water, 26°, drums, wks.	lb.	.02½	.02¾
Ammonium Carbonate, tech., bbls.	lb.	.08	.12½
Bleaching Powder, drums	100 lb.	2.25	2.60
Borax, pd., cryst., bbls., kegs	ton	50.00	55.00
Carbon Tetrachloride, car lots	lb.	—	.05¼
L. C. L.	lb.	.07	.08½
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	25.00
Cresol, U. S. P., drums	lb.	.11	.11½
Creosote Oil	gal.	.11½	.12½
Feldspar (200 to 325 mesh)	ton	14.00	15.00
Formaldehyde, bbls.	lb.	.06	.07
Fullers Earth	ton	15.00	24.00
Glycerine, C. P., drums	lb.	.14½	.15
Dynamite, drums	lb.	.14½	.15
Saponification, drums	lb.	.11¼	.12¼
Soap lye, drums	lb.	.10¼	.10¾
Hexalin, drums	lb.	—	.30
Kieselguhr, bags	ton	—	35.00
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	1.70	2.20
Mercury Bichloride, kegs	lb.	.71	.76
Naphthalene, ref. flakes, bbls.	lb.	.07¼	.07½
Nitrobenzene (Myrbane) drums	lb.	.09	.11
Paradichlorbenzene, bbls., kegs	lb.	.16	.25
Petrolatum, bbls. (as to color)	lb.	.02	.07¼
Phenol, (Carbolic Acid), drums	lb.	.14¼	.16
Pine Oil, bbls.	gal.	.59	.64
Potash, Caustic, drums	lb.	.06¼	.06½
Flake	lb.	.07	.07¼
Potassium Carbonate, solid	lb.	.07¼	.09½
Liquid	lb.	.03½	.03¾
Pumice Stone, powder	100 lb.	3.00	4.00
Rosins (600 lb. bbls. gross for net)—			
Grade B to H, basis 280 lbs.	bbl.	4.50	5.70
Grade K to N	bbl.	5.72	5.75
Grade WG and X	bbl.	5.85	6.00
Wood	bbl.	4.25	5.30
Rotten Stone, pwd. bbls.	lb.	.02½	.04½
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04⅜
Olive Castile, bars	lb.	.13	.19
powder.	lb.	.23	.30
Olive Oil Foot	lb.	.07	.07½
Powdered White, U. S. P.	lb.	.19	.21
Green, U. S. P.	lb.	.06½	.08
Tallow Chips	lb.	.07¼	.07¾
Whale Oil, bbls.	lb.	.05	.06
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.23	1.50
Car lots, in bulk	100 lb.	—	$1.05
Soda Caustic, cont., wks., sld.	100 lb.	—	2.60
Flake	100 lb.	—	3.00
Liquid, tanks	100 lb.	—	2.25
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	11.40	14.00
Sodium Fluoride, bbls.	lb.	.07¼	.08¾
Sodium Hydrosulphite, bbls.	lb.	.19	.20
Sodium Silicate, 40 deg., drum.	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.35	1.75
Tar Acid Oils, 15-25%	gal.	.21	.24
Trisodium Phosphate, bags, bbls.	lb.	.03	.03½
Zinc Oxide, lead free	lb.	.06	.06¼
Zinc Stearate, bbls.	lb.	.20	.22

Oils — Fats — Greases

Castor, No. 1, bbls.	lb.	.10¾	.11½
No. 3, bbls.	lb.	.10¼	.11
Coconut			
Manila, tanks, N. Y.	lb.	—	.04⅛
Tanks, Pacific coast	lb.	.03⅞	.04
Cod, Newfoundland, bbls.	gal.	.40	Nom.
Copra, bulk, coast	lb.	.0240	.0250
Corn, tanks, mills	lb.	.08	.08⅛
Cottonseed, crude, tanks, mill	lb.	.07½	Nom.
PSY	lb.	.08½	.09
Degras, Amer., bbls.	lb.	.05¼	.06
English, bbls.	lb.	.08¾	.10
Neutral, bbls.	lb.	.08	.11
Greases, choice white bbls., N. Y.	lb.	.04⅛	.05¾
Yellow	lb.	.03⅜	.03½
House	lb.	.03⅜	.03½
Lard, City	lb.	.10	.10¼
Compound tierces	lb.	.10¾	.11
Lard Oil,			
Extra, bbls.	lb.	—	.09½
Extra, No. 1, bbls.	lb.	—	.07¾
No. 2, bbls.	lb.	—	.07¼
Linseed, raw, bbls., spot	lb.	.0920	.0990
Tanks, raw	lb.	.0860	.0890
Boiled, 5 bbls. lots	lb.	.1040	.1070
Menhaden, Crude, tanks, Balt.	gal.	.32	.33
Oleo Oil, No. 1, bbls., N. Y.	lb.	—	.09½
No. 2, bbls., N. Y.	lb.	—	.09
Olive, denatured, bbls., N. Y.	gal.	.74	.75
Feots, bbls., N. Y.	lb.	.08	.08⅛
Palm	lb.	.04⅜	.04½
Palm Kernel, casks, denatured	lb.	.04⅞	Nom.
Peanut, domestic tanks	lb.	.07¾	.08
Red Oil, distilled bbls.	lb.	.08⅝	.09⅝
Saponified bbls.	lb.	.08⅝	.09⅝
Tanks	lb.	—	.07¾
Soya Bean, domestic tanks, N. Y.	lb.	—	.07
Stearic Acid,			
Double pressed	lb.	.08½	.09½
Triple pressed, bgs.	lb.	.11¼	.12¼
Stearine, oleo bbls.	lb.	.07¼	.07½
Tallow, special, f.o.b. plant	lb.	—	.04
City, ex. loose, f.o.b. plant	lb.	—	.04⅛
Tallow, oils, acidless, tanks, N. Y.	lb.	—	.07
Bbls., c/1 N. Y.	lb.	—	.07½
Whale, refined	lb.	.07¾	.08

Review of New Books

PERFUMES, COSMETICS AND SOAPS. By Wm. A. Poucher. Volume I. Fourth Edition. D. Van Nostrand Co., N. Y. C. 439 pages. 1936. Illustrated. 5½ x 8½ inches. Price, $8.00.

Since appearance of the edition just previous, the author has taken full cognizance of the many new materials both in the cosmetic and perfumery trades, that have been offered. He has added to his dictionary of raw materials, 32 cosmetic materials, 17 essential oils and 68 synthetic aromatic chemicals. Casual scrutiny, shows that American vetivert oil has not been included in the monograph on this substance. The monograph on vitamins could be more complete, since vitamin D is not the only one used in cosmetics.

A valuable explanation of Albek's Burning Point experiments is found on page 358. Two compounds are formulated and relative burning points given, as well as safe amounts of each possible to use. Absorption bases are omitted, though oxycholestrins are described, but the definition is misleading. The section on pigments is interesting. The section on dyes would be much more complete if the Colour Index numbers were given, of if The Schultz & Julius system were used.

All in all, a very valuable book. A worthwhile addition, and to those not having a third edition, it is a "must" book. Mr. Poucher handles his material well, and van Nostrand have printed and bound the book in their usual excellent manner.

LAUNDRY CHEMISTRY. By A. Harvey. Second revised edition. Technical Press, London. Sole agents for American sale, Chemical Publishing Co., New York. 118 pages. 4⅞ x 7⅜. Price, $1.75.

A good practical book dealing with the materials and processes used by the modern laundryman. It is written in non-technical style to make it of value to readers lacking technical training. Separate chapters take up such subjects as soap, bleaching agents, water, starches, blues and blueing, stain removal, etc. Of interest to manufacturers of laundry materials as well as to users of these products.

CHEMICAL FORMULARY. By H. Bennett. Third revised edition. D. Van Nostrand Co., New York. 535 pages. 6 x 9. Price, $6.00.

The latest edition of this newest of the formula books. The publishers state that every formula appearing in the new edition is different from those appearing in the first two volumes. Included in this latest edition is a special index to all three volumes, making the whole group of formulas available for ready reference.

Aromatic Products Appoints

Aromatic Products, Incorporated, New York essential oil house, have appointed S. J. Vance as their Chicago representative with offices at 205 W. Wacker Drive. Mr. Vance was formerly with the Walter H. Jelly Co.

Chicago Ass'n Golf

The wind-swept course of the Itasca Country Club was the scene of the first tournament of the year of the Golf Auxiliary of the Chicago Drug and Chemical and the Chicago Perfumery, Soap and Extract Associations. More than sixty members and guests were on hand for the opening festivities. For this year's tournaments a fairer method of determining prize winners has been adopted. Net scores below par revert to par and in case of ties the prize goes to the player with the lowest handicap. Prize winners together with their gross and net scores follow: Class A—1st, A. C. Drury, 82-11-71; 2nd T. Morgan, 82-14-68; 3rd, H. Larson, 84-11-73; 4th, H. W. Cochran, 86-12-74. Class B—1st, C. Carson, 91-20-71; 2nd, H. L. Derby, 92-20-72; 3rd, W. H. Mutera, 89-20-69; 4th, R. Morris, 95-23-72. Class C—1st, H. Wallace, 92-20-72; 2nd, C. Drum, 106-32-74; 3rd, J. H. Helfrich, 110-34-76; 4th, L. A. Solo, 114-36-78. Guest prizes were won by K. Schanbacker, 96-23-73, and M. J. Pittsford, 86-12-74. J. DeLorme won the prize for the most honest golfer with 182-36-146. Announcement will be made shortly as to the course selected for the June tournament.

Protest Canadian Taxes

Manufacturers of toilet preparations, meeting in the Royal York Hotel in Toronto, recently endorsed a resolution asking the Canadian Government for relief from special taxation directed against toiletries and cosmetic preparations. The 10 per cent excise tax, President Robert Carr declared, is obviously intended as an impost against luxuries, and he protested that tooth paste, face powders, shaving creams and the like were not in this category. There was no desire on the part of the manufacturers to evade their share of taxation, he said, but the industry could not continue to absorb the extra levies. The 10 per cent tax is in addition to the sales tax of 8 per cent.

G. J. Danco Visits France

Gerard J. Danco, New York, whose business was recently incorporated under his own name, sailed for France May 16th to visit his foreign suppliers. Mr. Danco expects to return about the end of June after developing plans for expansion of his business principally in the direction of specialty essential oils.

Offer New Musk for Soap

A new musk especially designed for use in perfuming of white toilet soaps has just been announced by Givaudan-Delawanna, Inc., New York, under the name "Musk Tibetine." It is said that contrary to the experience encountered in using some other musks, the new product can be used in white soaps without fear of discoloration.

Minimum duty rates on imports of red palm oil into Cuba for soap making have been extended for another six months beyond April 2 by a recent action of the Cuban Government.

Essential Oils

Almond, Bitter, U. S. P.	lb.	$2.00	$2.50
Bitter, F. F. P. A.	lb.	2.25	2.75
Sweet, cans	lb.	.58	.60
Anise, cans U. S. P.	lb.	.60	.63
Apricot, Kernel, cans	lb.	.22	.25
Bay tins		1.25	1.50
Bergamot, coppers	lb.	1.90	2.30
Artificial	lb.	1.00	1.30
Birch Tar, rect. tins	lb.	.75	.80
Crude, tins	lb.	.14	.16
Bois de Rose, Brazilian	lb.	1.25	1.40
Cayenne	lb.	2.30	2.50
Cade, cans	lb.	.26	.30
Cajeput, native, tins	lb.	.45	.46
Calamus, tins	lb.	3.25	3.50
Camphor, Sassy, drums	lb.	.15	.17
White, drums	lb.	.16	.20
Cananga, native, tins	lb.	2.30	2.35
Rectified, tins	lb.	2.60	2.65
Caraway Seed	lb.	1.95	2.20
Cassia, Redistilled, U. S. P.	lb.	1.00	1.10
Cedar Leaf, tins	lb.	.85	1.10
Cedar Wood, light, drums	lb.	.18	.22
Citronella, Java, drums	lb.	.31	.32
Citronella, Ceylon, drums	lb.	.18	.19
Cloves, U. S. P., tins	lb.	—	.97
Eucalyptus, Austl., U. S. P., cans	lb.	.35	.36
Fennel, U. S. P., tins	lb.	1.00	1.25
Geranium, African, cans	lb.	5.25	6.75
Bourbon, tins	lb.	5.50	7.00
Hemlock, tins	lb.	.70	.80
Lavender, U. S. P., tins	lb.	3.25	7.00
Spike, Spanish, cans	lb.	1.00	1.50
Lemon, Ital., U. S. P.	lb.	1.00	1.50
Lemongrass, native, cans	lb.	.45	.50
Linaloe, Mex., cases	lb.	1.25	1.30
Nutmeg, U. S. P., tins	lb.	1.20	1.35
Orange, Sweet W. Ind., tins	lb.	1.95	2.00
Italian cop	lb.	1.90	2.75
Distilled	lb.	—	.75
Origanum, cans, tech.	lb.	.70	.75
Patchouli	lb.	4.75	6.00
Pennyroyal, dom.	lb.	1.65	1 90
Imported	lb.	1.30	1.40
Peppermint, nat., cases	lb.	1.90	2.30
Redis., U. S. P., cans	lb.	2.15	2.55
Petit, grain, S. A., tins	lb.	1.00	1.15
Pine Needle, Siberian	lb.	.90	.95
Rose, Natural	oz.	5.25	18.00
Artificial	oz.	2.00	3.00
Rosemary, U. S. P., tins	lb.	.34	.45
Tech., lb. tins	lb.	.30	.40
Sandalwood, E. Ind., U. S. P.	lb.	4.80	5.50
Sassafras, U. S. P.	lb.	.75	1.00
Artificial	lb.	.38	.39
Spearmint, U. S. P.	lb.	1.40	1.50
Thyme, red, U. S. P.	lb.	.58	1.02
White, U. S. P.	lb.	.65	1.10
Vetivert, Bourbon	lb.	10.50	11.00
Ylang Ylang, Bourbon	lb.	4.60	7.00

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.25	$2.25
Amyl Cinnamic Aldehyde	lb.	1.75	2.50
Anethol	lb.	1.05	1.10
Benzaldehyde, tech.	lb.	.60	.65
U. S. P.	lb.	1.20	1.30
Benzyl, Acetate	lb.	.56	1.00
Alcohol	lb.	.65	1.15
Citral	lb.	2.00	2.30
Citronellal	lb.	2.05	2.50
Citronellol	lb.	1.90	2.15
Citronellyl Acetate	lb.	4.50	7.00
Coumarin	lb.	3.10	3.30
Cymene, drums	gal.	.90	1.25
Diphenyl oxide		.70	1.00
Eucalyptol, U. S. P.	lb.	.50	.55
Eugenol, U. S. P.	lb.	2.00	2.50
Geraniol, Domestic	lb.	.75	2.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	2.00	2.50
Heliotropin	lb.	2.00	2.10
Hydroxycitronellal	lb.	3.50	9.00
Indol, C. P.	oz.	2.00	2.50
Ionone	lb.	3.25	5.50
Iso-Eugenol	lb.	3.00	4.25
Linalool	lb.	1.65	2.25
Linalyl Acetate	lb.	1.50	3.25
Menthol	lb.	3.50	3.60
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.10	2.75
Paracresol	lb.	4.50	6.00
Salicylate, U. S. P.	lb.	.40	.45
Musk Ambrette	lb.	4.20	5.00
Ketone	lb.	4.35	5.25
Xylene	lb.	1.25	2.00
Phenylacetaldehyde	lb.	4.80	8.00
Phenylacetic Acid, 1 lb., bot.	lb.	2.50	3.25
Phenylethyl Alcohol, 1 lb. bot.	lb.	4.00	4.50
Rhodinol	lb.	5.75	8.00
Safrol	lb.	.54	.57
Terpineol, C. P., 1,000 lb. drs.	lb.	.23	.25
Cans	lb.	.27	.30
Terpinyl Acetate, 25 lb. cans	lb.	.80	.90
Thymol, U. S. P.	lb.	1.40	1.50
Vanillin, U. S. P.	lb.	3.75	4.00
Yara Yara	lb.	1.30	2.00

Insecticide Materials

Insect powder, bbls.	lb.	.17	.18
Concentrated Extract			
5 to 1	gal.	1.25	1.30
20 to 1	gal.	4.25	4.50
30 to 1	gal.	6.25	6.45
Derris, powder—4%	lb.	.40	.42
Derris, powder—5%	lb.	.24	.48
Cube, powder—4%	lb	.34	.37
Cube, powder—5%	lb.	.40	.42

Gums

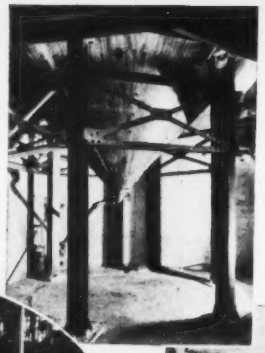
Arabic, Amb. Sts.	lb.	.09	.09½
White, powdered	lb.	.13	.14
Karaya, powdered No. 1	lb.	.09½	.10
Tragacanth, Aleppo, No. 1	lb.	1.25	1.30
Sorts	lb.	—	.25

Waxes

Bees, white	lb.	.36	.38
African, bgs.	lb.	.25	.26
Refined, yel.	lb.	.28	.30
Candelilla, bgs.	lb.	.16	.16½
Carnauba, No. 1	lb.	.45	.45½
No. 2, yel.	lb.	.43	.44
No. 3, chalky	lb.	.35	.36
Ceresin yellow	lb.	.36	.38
Paraffin, ref. 125-130	lb.	.04¼	.04½

Three Practical Ways to KEEP Soap CLEAN

• *Typical installation of steel soap boiling kettles with top sections lined with light gauge Monel Metal sheet. This is one way that any soap plant can greatly improve existing equipment.*



• *Two views of a 15' diameter x 29' high soap boiling kettle built entirely from 3/8", 1/4" and 5/16" thick Nickel-Clad Steel, with welded and riveted construction. Heating coils and discharge spout are solid nickel. The butterfly covers are also Lukens Nickel-Clad Steel. This kettle was built by Southwest Welding and Manufacturing Company, Alhambra, California, for a large manufacturer of fine toilet soaps.*

How the danger of contamination in boiling kettles can be lessened or completely avoided!

• *Two steel soap boiling kettles built with top sections and covers of Nickel-Clad Steel. These are all-welded kettles built by Littleford Bros. of Cincinnati, Ohio, who have also built a number of large all-Nickel-Clad Steel boiling kettles for high grade soaps.*

MANUFACTURERS of high grade soap, who refuse to accept caustic soda that contains more than 25 parts of iron in a million, are taking equally sensible precautions in their various processes.

Soap, in the kettle, is being protected against discoloration—its purity maintained—and subsequent effects of impurities on perfumes and keeping qualities are minimized.

One method used is to line the top sections of iron or steel kettles with light gauge Monel Metal sheet to a point below the liquid level. Monel Metal is also used for covers. This provides an economical way to eliminate that large part of the rusting and corrosion which occurs at the air-liquid level, in the upper section of the kettle.

Another method, frequently being followed with new installations, is to build steel kettles with top sections and covers of Nickel-Clad Steel.

A third method, and one being more and more frequently adopted by makers of high grade toilet soap is to install kettles made entirely of Nickel-Clad Steel. These kettles are of welded and riveted construction and are equipped with either pure nickel or Monel Metal steam coils, outlet valves, swing piping and fittings.

Both Monel Metal and nickel are highly resistant to corrosive action of caustic soda, fatty acids and salt. That fact accounts for the wide application of both metals in the soap industry.

Send for any or all of the following free bulletins: "Nickel and Monel Metal in the Manufacture of Soap"; "Methods for the Fabrication of Nickel-Clad Steel"; "Lukens Nickel-Clad Steel in the Process Industries". Write to

THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall St., New York, N. Y.

Monel Metal

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries*.

Alkali in Toilet Soap

FREE alkali is present in soap if a freshly cut surface shows an immediate red color with phenolphthalein. A safer test is to dissolve some soap in a few cc. of freshly boiled neutral alcohol, filter off undissolved carbonates, and test the filtrate with phenolphthalein.

The number of methods for the quantitative determination of free alkali in soap is large, but not all of them can be relied on. For relatively large amounts of free alkali the following method is satisfactory: Dissolve 30 grams of soap in 100-150 cc. of absolute, neutral alcohol. (Alcohol is usually acid and should be made neutral to phenolphthalein.) Transfer the solution to a 250 cc. volumetric flask and dilute to volume with absolute alcohol. After carbonates and other insoluble materials have settled, pipet out 50 cc. and titrate with 0.1 *N* hydrochloric acid to a phenolphthalein endpoint. One cc. of 0.1 *N* hydrochloric acid equals 0.004 gram of sodium hydroxide. From this the percentage of free alkali can easily be calculated.

For the determination of very small amounts of free alkali another method is suggested. Dissolve exactly 5 grams of soap in 100 cc. of 50 per cent neutral alcohol by warming gently in a flask under a reflux condenser. Cool quickly and shake with 25 cc. of 10 per cent barium chloride solution. Add 2 to 5 cc. of a solution of 0.1 gram of β-naphtholphthalein in 150 cc. of alcohol. Add 100 cc. of water. This indicator colors an alkaline solution green, an acid solution red. Titrate with 1/40 *N* stearin solution in absolute alcohol to a colorless to reddish endpoint. One cc. of 1/40 *N* acid equals 0.001 gram of sodium hydroxide.

Alkali Carbonate

DISSOLVE 5 grams of soap free from silicates and borates, in 150 cc. of 50 per cent alcohol, cool quickly and titrate with 0.1 *N* hydrochloric acid to a phenolphthalein endpoint. The amount of acid used corresponds to the sum of the free alkali and half the carbonate present. Titrate the free alkali separately as outlined above, in a second sample. The difference between the two titrations, multiplied by two gives the amount of acid corresponding to the quantity of carbonates present. One cc. of 0.1 *N* acid equals 0.0053 gram of sodium carbonate or 0.0069 gram of potassium carbonate.

A small amount of free alkali should be present in the best quality of toilet or cosmetic soap to insure its stability. The amount present in the finished soap should be within the limits of 0.04 to 0.08 per cent. Higher amounts of alkali may irritate the skin. This is the amount for the finished soap. Much of the free alkali originally present in a soap batch is changed to carbonate by reaction with the carbon dioxide of the air during processing and drying. It is estimated that an original excess of 0.4 per cent of free alkali is changed to 0.1-0.15 per cent during drying, for example for 35 minutes at 55° C., and to 0.04-0.06 per cent of free alkali during milling. Such a soap should be stable for a year.

Actual Alkalinity

THE actual alkalinity of a soap is measured by pH determinations, for which a colorimetric method is used. Dissolve 2 grams of the soap in 10 cc. of distilled water by warming, cool to 40° C. after solution is complete and determine the pH value. Dilute this to 100 cc. and again determine the pH value. The value of the 2 per cent solution should be not over 9.3 and of the 20 per cent solution not over 8.3.

Salt Content

TREAT 10-20 grams of soap in a 300 cc. Erlenmeyer flask with 10-15 cc. of concentrated nitric acid and 5-10 cc. of 0.1 *N* silver nitrate solution. Heat to boiling and continue boiling for 5 minutes or until decolorized. Dilute with 150 cc. of distilled water, let cool, and treat with 2cc. of a saturated solution of iron ammonium alum. Back-titrate unused silver nitrate with 0.1 *N*. ammonium thiocyanate solution to a rose color. The ammonium thiosulfate solution should have been previously standardized against the silver nitrate solution. One cc. of

0.1 *N* silver nitrate solution equals 0.005846 gram of sodium chloride.

The finest grade of toilet soap should not contain more than 0.5 per cent of carbonate nor more than 0.6 per cent of sodium chloride. More general conditions which should be met are that such soap should be free from rosin and unsaponified fat and should foam well in water of 15 degrees of hardness. It should contain no materials which might irritate the skin. This type of soap might be termed cosmetic soap. It should preferably be made with fatty acids melting at not under 37° C. and having an acid number of 203-212. If called cosmetic soap, superfatting should be with cocoa butter. Walther Rumpel. *Seifen-Fachblatt* 8, No. 4, 1-3 (1936).

Solvent Soaps

A new solvent is being produced in Germany for use in soap by the Deutsche Hydrierwerke A. G., Berlin. The product is called clyclonol and is recommended for use in the preparation of household soaps. It is a nonvolatile material and has high solvent power for fats, waxes, oil and other soil-fixing substances. It has no objectionable odor and does not detract from the detergent action of soap.

The organic solvent is water-clear and has the following constants: Acid number 0, saponification number 0, acetyl saponification number 246, d_{20} 1.074, n_{20} 1.474 and boiling point, about 250° C. It is practically insoluble in water but soluble in organic solvents and in soap solutions. It can be incorporated in various types of products, for example a high proportion in liquid soaps and a low proportion in soap cakes. An example of the former type is made by mixing 14.3 parts of olein with 80 parts of cyclonol and saponifying with 5.7 parts of 50° Be. caustic potash (the theoretical amount). This produces a stable liquid product, a 2 per cent solution of which wets fabric instantly, while the same concentration of soap solution would wet it only slowly.

Experiments show that the surface tension of a dilute soap solution is decreased by the addition of very small amounts of cyclonol, both against air and against spindle oil. Since good foaming power is an important factor in soaps for domestic use, the foaming power of soap with various additions of the solvent was determined, using the procedure of Stiepel. The soap used was 75 per cent tallow and 25 per cent coconut oil. Mixtures varying in composition from 95 per cent soap plus 5 per cent cyclonol to 70 per cent soap plus 30 per cent cyclonol showed an increase in foaming power over the same concentration of soap alone.

The preparation of soaps containing the solvent can be carried out in various ways. The solvent may be added with stirring to the saponified warm soap stock, but if this is done it is best to mix it with small amounts of the soap first. If soap is made by the cold- or half-boiled process, solvent is added to the unsaponified fat charge. This hastens the saponification process. It can also be added during milling. Flakes and powders can be compounded with it, since it is a stable material. Another application is in paste soaps used for very heavily soiled or oily materials. *Ole, Fette, Wachse, Seife, Kosmetik*, No. 7, 29-30 (1936).

Soda Ash in Soap Solutions

The table below gives the pH value of soap solutions and soap plus soda ash solutions. The results show how an alkaline builder increases the hydrolysis alkalinity of soap solution. The concentration of soap solution used was 0.5 per cent. The determinations were made electrometrically with a hydrogen electrode at a temperature of 40° C. (104° F.). (Since pH values vary with concentration and temperature they can only be compared under the same conditions.)

The first column of figures gives the ratio of soap to soda ash when both were present. The second column gives the pH values of soda ash alone in concentrations of 0.1, 0.2, 0.3, 0.4 and 0.5 per cent respectively. The first row of figures across the top gives the pH values of the soap alone. The third column gives the values of 0.5 per cent soap with varying additions of soda ash, and so on for the other kinds of soap. The sodium laurate and myristate represents soap from coconut oil fatty acids. The latter had an iodine number of 0 and an acid number of 270.2 (Ed. Note—Since various authorities consider that optimum detergency requires a pH value of 10.5-10.7, the above data suggest that with most soaps a ratio of at least one part of soda ash to one part of soap is necessary for the best results. *Die Seifen—Ol—und Fett-Industrie* **22,** 62-3 (1936).

	pure soda	sodium oleate	sodium ricinoleate	sodium laurate & myristate	soap from rosin
0.5% soap soln.	—	8.35	7.82	9.21	8.57
Soap to soda 1:0.2	10.31	9.49	9.26	9.95	9.71
Soap to soda 1:0.4	10.58	9.70	9.97	10.10	10.12
Soap to soda 1:0.6	10.61	10.10	10.16	10.25	10.24
Soap to soda 1:0.8	10.65	10.27	10.27	10.38	10.52
Soap to soda 1:1	10.72	10.37	10.54	10.47	10.72
Soap to soda 1:2	10.80	10.59	10.69	10.80	—

Liquid Rosin

A new liquid rosin which can be suitably used in toilet soaps has a golden yellow color, a slight, pleasant odor, and flows freely at ordinary temperatures. It is guaranteed to contain 94-98 per cent of saponifiable matter and has an acid value of 178 and saponification value of 189. By the use of this product one can avoid having to melt the rosin either before adding to the soap-pan or in the pan itself, an operation which is always liable to increase the color. The material in question is quite different from that usually sold as liquid rosin, which is very dark in color, with a strong characteristic odor. *Perfumery & Essential Oil Record* **27,** 188 (1936).

Preserving Soaps

LONG experience with a particular type of soap has led to several important conclusions on how to prevent oxidation and rancidity in tropical climates. The soap stock referred to consists of equal parts of Ceylon coconut oil and crude corn oil, saponified with caustic soda by the usual boiled process. This soap was developed during the World War as a substitute for sulfur olive oil soap, used in the silk industry. It dissolves readily and gives an abundant lather. The usual practice is to give the soap three washes with salt and a slight excess of lye, and then make the settling change. No filler is added, the soap merely being passed through the crutcher and then drawn off into frames. The hard soap is later cut into four pound bars, allowed to dry somewhat, and sold on the basis of 30 per cent moisture. The bars have frequently showed spotting after several weeks' storage, partly attributable to the fact that they were stamped with a bronze die. Traces of iron from pipes and machinery are also thought to have contributed to oxidation by catalytic action.

The problem can be met in part in laundry soaps by the addition of alkalies such as soda ash, sodium silicate, trisodium phosphate and borax. One and one-half per cent of sodium silicate can even be added to white floating soap to overcome discoloration. The use of antioxidants has been tried with the soap described above with good results. Bars of this soap have been preserved perfectly for a long period by the use of a trade-brand antioxidant (American). Formaldehyde, thiosulfate and hexamethylenetetramine were tried as antioxidants in the corn-coconut soap with negative results. In the case of hexamethylenetetramine the soap became purple in a few days.

Dry chip soap does not oxidize as readily as does bar soap containing considerable moisture. Water and heat are conducive to oxidation so that the problem of stabilizing soap in a hot moist climate is very serious. Cold-made and half boiled soaps tend to sweat in such an atmosphere, since the glycerine present exerts a hygroscopic effect. A combination of rapesee oil and coconut oil resists oxidation better than corn and coconut oils. Rules which are of value in preventing oxidation of soap in hot damp climates are as follows:

1. The soap should be made by the boiled process to ensure complete saponification and elimination of glycerine.

2. As far as possible oils and fats of the saturated series should be selected.

3. A good antioxidant should be incorporated.

4. Essential oils should be selected which will not induce oxidation.

5. Where permissible, alkaline fillers should be employed. Benjamin Levitt. *Indian Soap J.* **2**, 210-11 (1936).

◆

Pure Fats by Distillation

Fats and fatty oils are purified by "breaking" with mineral acids, alkalies or salts to remove mucilaginous and solid or colloidal matter and then submitting to high-vacuum short-path distillation to remove free fatty acids and coloring matter as a first fraction and to leave a final residue of resinous and vegetable matter. As an example, cottonseed oil is stirred for one hour at 80° C. with 0.1 per cent of 50 per cent caustic soda, the mucilage is separated by settling, filtering or centrifuging, and the clear oil is distilled under 10^{-3}-10^{-4} mm. of mercury in a still having the heating and condensing surfaces 1.5 cm. apart. The five per cent distilling off at 200-220° is dark colored and contains the free fatty acids. The 90 per cent distilling off at 250-260° is a water-white oil. The residual 5 per cent is a dark tarry mass. Eric W. Fawcett and Imperial Chemical Industries Ltd. British Patent No. 438,056.

◆

Continuous Crutcher

A continuous soap crutcher consists of an enclosed mixer having an outlet and an inlet, the latter being fitted to supply a respective ingredient under pressure. A control mechanism is operated by the flow of one of the ingredients. The Procter & Gamble Co. of Canada, Ltd. Canadian Patent No. 357,469.

◆

Carbon in Fat Splitting

The use of activated carbon during the hydrolysis of fats improves the color of the fatty acids and the quality of the glycerine obtained. It is necessary to use a very active carbon which has been washed with hydrochloric acid. The adsorbed fat is recovered by extraction with a solvent. It is necessary to reactivate the carbon after use. *Les Matieres Grasses* **28**, 10790 (1936).

◆

Fatty Acids in Filled Soap

To determine fatty acids in filled soap heat 5 to 6 grams of sample under a reflux with 100 cc. of 60 per cent alcohol until nothing more dissolves. Decant off the clear liquid and repeat the operation. Unite the alcoholic solutions and dilute until the concentration of alcohol is approximately 20 per cent. The fatty acids are then separated by hydrolyzing with hydrochloric acid, extracted with ether and determined in the usual way. *Les Matieres Grasses* **28**, 10790 (1936).

◆

Modified Silicate Cleansers

Cleansing compositions having a basis of per compounds, salts of pyro- and metaphosphoric acids and alkaline substances described in No. 435,861 are modified by replacing the magnesium silicate, added for stabilizing purposes, by other sparingly soluble or insoluble silicates of the alkaline earths or of cadmium or zinc. Henkel & Cie. G.m.b.H. British Patent No. 438,063. Addn. to 435,861.

Detergents for Silks, Woolens

The notion still persists that a pure soap only should be used for washing delicate articles such as silks and woolens. The purest soap does not do its work as rapidly as one to which a judicious amount of alkali has been added, or as rapidly as a high-class soap powder. The washing process is thus unnecessarily prolonged. In the case of woolens this would promote shrinkage due to excessive mechanical disturbance. To avoid shrinkage and the development of harshness and yellowing in woolens and to minimize the possibility of tendering silks and woolens, the duration of the washing process should be reduced to a minimum consistent with a high degree of cleansing. R. Cartwright. *Soap, Perfumery and Cosmetics*, March 1936.

Unsaturated Fatty Acids

Conjugated ethenoid linkings capable of reacting with maleic anhydride are not present in the ordinary C_{20} and C_{22} aliphatic acids containing 4 and 5 ethenoid linkings respectively. Such fatty acids are obtained from marine life. R. S. Morrell and W. R. Davis. *J. Soc. Chem. Ind.* **55,** 101-3T (1936).

Emulsifying Agents

Those compounds which contain at least one group causing solubility in water and at least one aliphatic or cycloaliphatic lipophil group of high molecular weight, and in which the lipophil group is joined to the other group by means of an aromatic chain of carbon atoms interrupted by a group of amides of acids and an amino group, are used as emulsifying, washing and dispersing agents. Henkel & Cie. G.m.b.H. French Patent No. 789,968.

Hypochlorite Wash Powder

Hypochlorite solution is mixed with anhydrous soda, and optionally with silica, to form a solid washing agent. Mor Reich. Hungarian Patent No. 113,313.

Rug Cleaning Compounds

A recently patented formula for a carpet cleaning compound is: 1 part of ethyl alcohol, 3 parts of 5 per cent acetic acid, 0.08 part of Igepon T. powder. This acid preparation is considered more likely to be effective than the following alkaline mixture, a proprietary composition for cleaning rugs, which is said to disinfect and mothproof at the same time:

Trisodium phosphate	23 parts
Borax	27 parts
Metasilicate	3 parts
Soda soap	30 parts
Soda ash	8 parts
Paradichlorbenzene	3 parts

The components are weighed and mixed dry. The powder is dissolved in boiling water for use, and applied with a brush. *Textile Colorist* **58,** 326 (1936).

Oil Extraction

Oils are extracted from marine animal tissues by breaking down the tissue with dilute alkali, separating the scum containing the oil and breaking this emulsion with a liquid such as ethyl alcohol which is miscible with water, but not with the oil. John F. Ward. British Patent No. 438,349.

Washing Agent

A washing agent is made by treating a mixture of powdered dry alkali carbonates and calcium oxide or hydroxide with hydrocarbons, bitumens, waxes, various salts of fatty acids and derivatives of highly sulfonated fatty acids which are unsaponifiable in the cold. Soap particles or powder may be added. The mixture can be stored without decomposition and can be added directly to the warm water with which the articles are to be washed. Gyorgy Kereszty. Hungarian Patent No. 113,632.

Fatty Acid Emulsion

An emulsion of fatty acids in which the size of the particles does not exceed 0.025 mm. is used as a washing agent. A/S Niro Atomizer. Danish Patent No. 50,241.

Phosphate Detergent

Detergent preparations are obtained by mixing a sufficiently water-soluble polyglycerol ester containing unesterified hydroxy groups with one or more soluble sulfates that form freely flowing powders with the oily or sirupy esters. Alkali metaphosphate or pyrophosphate may be added. Suitable esters are the mono-acid esters of rosin, naphthenic and fatty acids, e.g. the acids of palm-kernel oil with tri-, tetra- and penta-glycerols. Lever Brothers, Ltd., Reginald Furness and Arthur Fairbourne. British Patent No. 439,435.

Fish Oil Candles

Autoclaved stearin made from hardened fish oil, having a high titer and snow-white appearance, makes a suitable substitute for paraffin for candle-making purposes. S. Ueno and H. Tsuchikawa. *J. Soc. Chem. Ind., Japan* **38,** Suppl. binding 693.

Superfatting Agent

A mixture of wool fat, spermaceti and/or bottlenose-whale oil or a mixture of the purified products of these substances, is incorporated into soap as a superfatting agent without saponification. C. Cronquist. Swedish Patent No. 80,963.

Age of Stored Oil Cake

The age of stored oil cake can be estimated from a consideration of the free acidity of the oil extractable from the cake. The amount of free fatty acids of the oil present increases more rapidly in press cakes which have been stored whole than in samples of ground cake, cake edge-parings, or unpressed meal from the kettle, kept under similar conditions. J. Rallis. *Bull. Mat. Grasses* **20,** 43-7 (1936).

Refining Fish Oils

Fish and aquatic animal fats are refined by removing albuminous and mucilaginous substances with 0.5 per cent of oakbark extract. A. Sergeev. *Masloboino Zhirovoe Delo* **11,** 551-3.

Products and Processes

Cold-Water Soaps

Soaps that are readily soluble in cold water and do not become rancid although prepared from fatty oils having an iodine number of at least 70 are obtained by limiting the content of such fatty oils to 25-55 per cent of the fatty constituent and adding di- and/or tri-hydric alcohols and water-soluble phosphates. Viktor Dabsch and Julius C. Vredenburg. British Patent No. 438,231.

◆

Mixed Phosphate Cleaners

Detergents are made by adding a mixture of water-soluble meta- and pyro-phosphates in which the pyrophosphate is more than 10 per cent of the metaphosphate, to known cleansing agents other than per compounds. Suitable cleansing agents are borax, borates, soda, waterglass, alkali orthophosphates and soaps. Soap substitutes, superfatting agents, and abrasives may also be added. Henkel & Cie G.m.b.H. British Patent No. 439,493.

◆

Fatty Acid Composition

A new composition is a mixture of alcohols corresponding to the number of carbon atoms in the fatty acid radicals contained in coconut oil. It is prepared by catalytic hydrogenation of the natural glycerides at a temperature above 200° C. and a pressure above 10 atmospheres. The Canadian Industries, Ltd. Canadian Patent No. 357,598.

◆

Transparent Rosin Soap

Rosin can be used in transparent soap and has the advantage of low cost, of imparting to the soap an aromatic odor and good foaming power, and of counteracting rancidity development. The amount of rosin used must be held within suitable limits, as too much will make the soap soft and sticky. The quality of the rosin selected naturally depends on the quality of the soap to be produced. The following are examples of suitable compositions for this type of soap:

	Parts by weight		
Ingredients	I	II	III
Tallow	58	46	34
Coconut oil	17	23	33
Castor oil	8	8	—
Rosin	17	23	33
Caustic soda, 48°	47	45	46
Glycerine	25	—	13.5
Sugar	—	31	—
Water	—	18.5	—
Alcohol	25	38	33.5

Karl Pfaff. *Riechstoff Ind. u. Kosmetik* **11,** 47 (1936).

◆

Raw Wool Detergents

Soap alone is not satisfactory for washing raw wool, as it leaves much calcium soap on the fiber. Soda ash alone gives good washing results but has a deleterious effect on the fiber. With soap and soda ash the effect depends on the amount used. For good washing enough soda ash to soften the water must be used. In combining soap with a dispersing agent an excess of each must be used. When soap, dispersing agent and a small amount of soda ash are used, the soda ash plays a part in promoting detergency. The best results were obtained in this work with soda ash and dispersing agent, using enough soda ash to give the optimum pH for the action of the dispersing agent. Addition of soap under these condition is both unnecessary and harmful. Kurt Lindner. *Melliand Textilber.* **16,** 782-6.

◆

Dairy Detergents

A mixture for dissolving hardened milk deposits in dairy utensils should be strongly alkaline in nature, but in order not to corrode tin surfaces, agents other than straight alkaline salts are needed. Silicates tend to decrease corrosion, as does also the presence of a reducing agent. A suitable formula is as follows: 50 parts of salammoniac, 5 parts of powdered caustic soda, 5 parts of sodium metaphosphate, 10 parts of sodium metasilicate, 15 parts of trisodium phosphate and 15 parts of sodium sulfite. *Seifensieder-Ztg.* **63,** 297 (1936).

◆

Saddle Soap

To make saddle soap melt together 14 parts of Lagos palm oil and 1 part of light rosin. Saponify in the usual way with 7 parts of 38° Be. caustic soda, correct as needed and stir in 35-40 parts of water, 5 parts of calcium-free, water-white glycerine, 30° Be., and 0.2 part of talcum. Many products also contain 1-2 per cent of beeswax. Run into forms to set. *Seifensider-Ztg.* **63,** 297 (1936).

◆

Nitrate Metal Cleaners

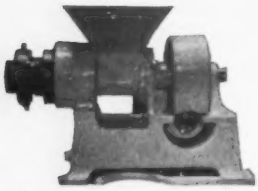
Deposits and incrustations are removed from metal vessels by solutions of those organic salts of nitric acid which give an acid reaction and the bases of which react with oxides of nitrogen to form harmless gases such as nitrogen and carbon dioxide. Nitrates of amino compounds such as urea, taurine, glycocoll, and acetamide may be used. Wetting agents, neutral salts such as potassium sulfate and infusorial earth may be added. Henkel & Cie G.m.b.H. French Patent No. 790,557.

◆

Hydrogenated Fats

Three fats were studied after complete hydrogenation, beef tallow, lard and horse fat. The hydrogenated beef tallow melted at 58.7-61.2° C. and had a saponification value of 196.7 and a Wijs iodine value of 0.57. The lard melted at 58.8-60.6° and had a saponification number of 195.0 and iodine number of 0.24. Horse fat melted at 61.2-62.2° and had a saponification value of 196.4 and an iodine value of 0.31. These constants indicate the following compositions: Beef tallow C_{14} 2.0, C_{16} 30.3 and C_{18} 64.5 per cent fatty acids; lard C_{16} 23.7, C_{18} 73.3; and horse fat C_{14} 1.4, C_{16} 34.8 and C_{18} acids 60.7 per cent. S. Ueno and T. Takeuchi. *J. Soc. Chem. Ind.*, Japan, **38,** 740-2B.

HOUCHIN MACHINERY CO. HAWTHORNE, N. J.



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No. 90B
1½ outlet. Good for cakes up ½" x 1⅛" 1/3 H.P.

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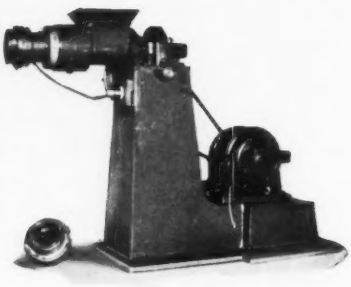
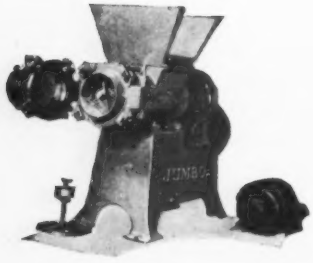


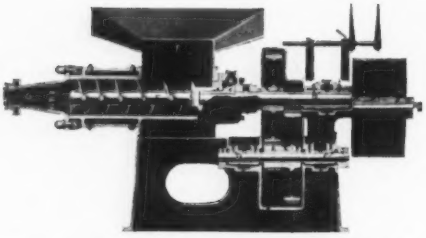
No. 90 Plodder
Made in two sizes 4" and 6"
2¾" outlet. Good for cakes up to 4 oz. 1" x 2" x 3".
MILLESS METHOD

Electric Heater and
Forming Plate Holder
made to fit all plodders.

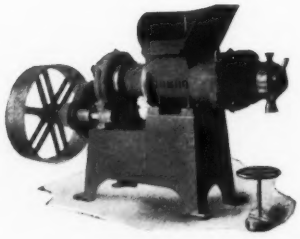


No. 92B
Combination Plodders made in two sizes 8" and 10"
MILLESS METHOD

PLODDERS
PRODUCE RIBBONS
SAME AS MILLS



Extra Heavy Type F Plodder No. 93 made in two sizes 8¾" and 12".



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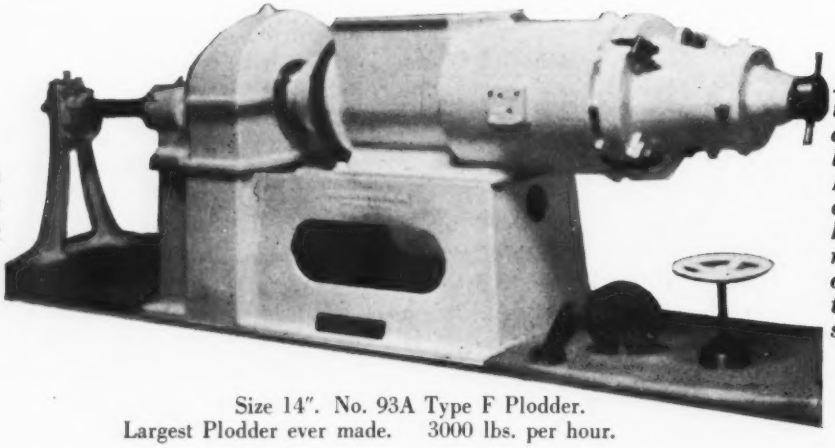
Standard Finishing Plodder made in two sizes 8" and 10" gear drive.

All gears in our Plodders run in oil tight cases.



All Bearings in our Plodders are bronze lined. The Bearing back of the screen has oil sealed ring to prevent oil from getting in the soap.

Size 14". No. 93A Type F Plodder.
Largest Plodder ever made. 3000 lbs. per hour.

New Equipment

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

232—New Portable Mixers

Eastern Engineering Co., 41 Fox St., New Haven, Conn., is bringing out a new line of portable electric mixers for general industrial application. The novel "Turbo-Thrust" design of propeller is said to combine two important mixing functions. The thrust action creates a strong current of liquid directed toward the bottom of a mixing tank so that undissolved or suspended matter is kept circulated and is prevented from settling. The "turbo" action produces violent agitation around the propeller itself, mixing liquids as they pass through this area. Nickel plated cast bronze propellers and 30 inch stainless steel shafts are furnished as standard equipment. Monel shafts and propellers are available. Heavy malleable iron clamps are furnished for attaching the mixer to a mixing vat at any desired angle. All mixers are equipped with 8 foot all rubber cords, cord switches, and soft rubber attachment plugs. All motors are designed for continuous duty. A folder describing the new mixers is available.

◆

233—Pyrethrum Dispenser

Edelman Co., Chicago, is introducing a new automatic electric insecticide vaporizer. In use a specially prepared emulsion of pyrethrum extract is simply poured into a wide-mouthed basin, the device is set on the floor and plugged in the light socket, and vapor starts immediately. This vapor is non-directional and spreads to give wide coverage. Upon completion of treatment, current shuts off automatically. The temperature is maintained well below flash point of deodorized kerosene base and waste in incompletely vaporized droplets is obviated. The commercial size dispenses one-half pint liquid at a time. The domestic size dispenses one-eighth pint for household use. The unit is made under patents.

◆

234—New Screw Capper

Scientific Filter Co., New York, is now offering a new portable electric screw capper which will handle average caps at the rate of 50 to 100 per minute. A folder describing the new equipment is available.

◆

236—New Emulsifier

Abbe Engineering Co., New York, is introducing the "Impulsor" emulsifier for use in the preparation of emulsions of various types. The machine mixes and emulsifies in a single operation. Fluids under treatment are subjected to a rapid succession of great increases and diminutions in pressure, finally to be ejected at high velocity through a narrow gap. The operation is a continuous one and consequently every portion of the liquid undergoes, in turn, the same amount of treatment, resulting in uniform and consistent products. A folder describing this equipment is available.

Publications

237—Book on Liquid Caustic

Mathieson Alkali Works, New York, have just published a new 72-page book with the title "Cutting Costs with Liquid Caustic Soda". Their new book presents a thoroughgoing study of the economics of the "solid caustic vs. liquid caustic" question and gives much useful information on the handling of liquid caustic soda. Comprehensive technical data on sampling and analysis methods as well as on the properties of caustic soda and its aqueous solutions adds greatly to the value of the book as a handy reference manual. Copies may be obtained through SOAP or by addressing Mathieson Alkali Works direct at 60 East 42nd St., New York.

238—Schimmel Report

The English edition of the well-known Schimmel scientific report on essential oils, synthetic perfumes, etc. has just been received. The report contains the customary details regarding crops and market conditions as well as important developments during the year under review. Included in the report are commercial notes, scientific reports concerning volatile oils, and remarks on general research in the aromatic field. The publication may be obtained from the leading book suppliers.

239—New Packaging Folder

Package Machinery Co., Springfield, Mass., has just issued a new folder describing the model "FA" wrapping machine. This particular member of the company's line will handle many different sizes of packages and can be adapted to practically any type of wrapping material. Copies of the folder will be mailed on request.

241—Soap Dispensers

Clifton Chemical Co., New York, has just issued a new folder showing its complete line of soap dispensers and soap dispensing systems. Copies are available.

242—Packaging Folder

Stokes & Smith Co., Philadelphia, has just issued a broadside describing its line of equipment for filling, sealing, wrapping, etc. Copies are available.

243—Cream Bases

Th. Goldschmidt Corp., New York, recently mailed a folder describing its line of cream and ointment bases for soapless, neutral and acid emulsions. Copies available.

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Soaps, by Hurst. A practical manual of soap manufacture. 440 pages. $8.50.

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Spray Process for Soap Powders, by Thomas. Full discussion of latest manufacturing processes. 72 pages, in German. $1.50.

Vegetable Fats and Oils, by George S. Jamieson. 444 pages. An American Chemical Society Monograph. Covering classification, occurrence, properties, analytical methods, etc., of vegetable oils, fatty acid and other derivatives; also production and refining methods. $6.50.

Chemistry of Laundry Materials, by D. N. Jackman. A new book for the laundry operator, containing valuable information on the chemistry of laundry materials. Discusses alkalies, soaps, bleaches, starches, also the newer detergents, synthetic soaps, etc. 230 pages. $2.50.

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No. 2,036,438, Cleaning Composition, Patented April 7, 1936 by Walther Schrauth, Berlin-Dahlem, Germany, assignor, by mesne assignments, to E. I. du Pont de Nemours & Co., Wilmington, Del. A washing, cleaning, wetting and emulsifying agent comprising a water-soluble soap together with a compound taken from the group consisting of 2,2 pentamethylene-4-oxymethyl - dihydro - dioxol, 2,2 methylpenta-methylene-4-oxymethyl-dihydrodioxol, 2,2 dimethyl-4-oxymethyl-dihydro-dioxol, water and an aromatic hydrocarbon having solvent properties for fats.

No. 2,037,004, Process of Saponification, Patented April 14, 1936 by Ralph Everett Burns, Los Angeles, Calif., assignor to Refining, Inc., Reno, Nev. A process of producing a saponified product containing a modifier directly from a saponifiable material by reaction with a saponifying reagent which comprises: causing a properly proportioned mixture of a saponifiable material and an aqueous solution of a saponifying reagent to flow through a reaction zone in which the reagent reacts with the saponifiable material and a suspension containing a saponified substance is formed, the mixture being at a sufficient temperature while in the zone to cause a rapid and efficient reaction between the material and the reagent; introducing a modifier into the turbulent flowing stream of the suspension whereby to obtain a uniformity of distribution of the modifier therein and subjecting the flowing stream of the suspension and the modifier to a cooling zone whereby to entrain the uniformly distributed modifier in the soap as it solidifies.

No. 2,037,006, Process for Producing soap having a definite water content, Patented April 14, 1936 by Benjamin Clayton, Sugarland, Tex., assignor to Refining, Inc., Reno, Nev. A continuous process of producing soap directly from a saponifiable material by the reaction therewith of an aqueous solution of a saponifying reagent, and recovering the glycerine produced by the process, which comprises: contacting the materials to produce soap and glycerine into an evaporating chamber; continuously removing water and glycerine vapor from the chamber at a rate sufficient to maintain a sufficient vacuum therein to vaporize substantially all the water and glycerine in the mixture; and continuously withdrawing soap from the chamber in such a manner as not to impair the vacuum maintained therein.

No. 2,037,439, Fumigant Composition, Patented April 14, 1936 by Hans Schrader and Erwin Bossert, Essen-Ruhr, Germany, assignors, by mesne assignments, to Union Carbide and Carbon Corporation. A composition of matter suitable for destroying pests and germs of all kinds, comprising alkylene oxids dissolved in liquid carbon dioxid under pressure.

No. 2,037,566, Cleaner for Metals, Patented April 14, 1936 by Charles B. Durgin, Anniston, Ala., assignor to Swann Research, Incorporated. A cleaner for tin, zinc and aluminum surfaces comprising the following ingredients in approximately the proportions given:—

	Parts
Trisodium phosphate	63
Sodium perborate	10
Sodium silicate in which the Na_2O: SiO_2 ratio is 1:2 to 1:3.2	25
Magnesium sulphate	2

No. 2,038,653, Cleaning Composition, Patented April 28, 1936 by Chester G. Gilbert, Washington, D. C., assignor to Research Corporation, New York, N. Y. A cleaning composition consisting essentially of a water-soluble detergent component and a hard inert finely divided mineral filler component, characterized in that the hard mineral filler component consists of spherulitized particles of inert mineral filler, the spherulitized particles being producible by passing a suspension, in a gaseous medium, of the mineral, in finely subdivided form, through a zone of heating at the fusing temperature of the mineral.

◆

New Detergent

A detergent product in the form of a dry free-flowing powder consists of 1 part by weight of a polyglycerol ester containing unesterified hydroxyl groups, 1½-5 parts by weight of a soluble sulfate selected from the group consisting of sodium sulfate, potassium sulfate, ammonium sulfate and magnesium sulfate, ⅛-½ part by weight of a soluble alkali metaphosphate, and ⅛-½ part by weight of an alkali pyrophosphate. Lever Brothers, Ltd. Canadian Patent No. 357,502.

◆

Phenolsulfonate Cleansers

Cleansing and impregnating agents consist of phenolsulfonates containing an alkyl group of 12-23, or preferably 15-19 carbon atoms attached to the ring, such as lauryl and tetradecyl derivatives. National Aniline & Chemical Co., Inc. French Patent No. 790,447.

◆

Cleaning Compound

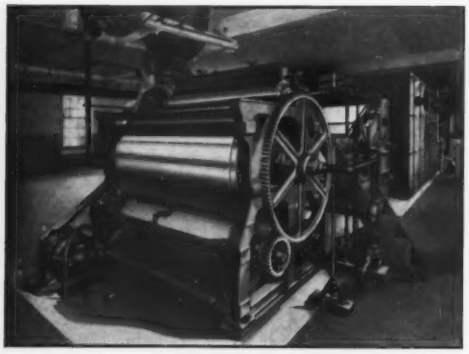
A cleaning composition contains 44 parts of soda ash, 15 of caustic potash, 106 of powdered soap, 728 of water, 5 of glucose, 9 of glycerol, 1 of saponin and 92 of calcium carbonate. Germaine Roux and Andre Delemer. French Patent No. 790,722.

◆

Esters as Wetting Agents

Esters of hydroxycarboxylic acids, the alcohol radical of which contains more than 3 carbon atoms, are used as wetting agents. Examples are the hexyl ester of glycolic acid, the amyl ester of lactic acid and the hexyl ester of tartaric acid. Alexander Wacker *Ges. fur elektrochem. Ind.* G.m.b.H. French Patent No. 790,041.

PRODUCING THE PERFECT CHIP FOR ALL SOAP MAKING NEEDS



● New Type Proctor Chip Soap System producing extremely thin chips of textile soap in new plant of Original Bradford Soap Co., River Point, R. I.

● The New Proctor Chip Soap System produces the thinnest of chips . . . chips perfectly formed in long ribbons, evenly thin from edge to edge, uniformly dried free from hard overdried particles or underdried spots. These chips make cleaner, whiter,. quicker-dissolving laundry flakes. They make smooth-surfaced, clear-colored toilet cakes. They give quicker, better milling and plodding. They give quicker, easier grinding into powdered soaps . . . with less loss in dust. New high speed chilling roll . . . spray-cooled, pump-drained, precision-ground, smooth-surfaced. New drying machine . . . with revolutionary improvements in principal details of design . . . more efficient, more economical, cleaner in operation. Write for your copy of our new descriptive Bulletin No. 72.

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TRADE REVIEW

MILLED TOILET SOAPS

(*From Page 37*)

sodium hyposulfite will make the soap less pliable. Investigation has shown that if the total salt content of soap does not exceed 0.54 per cent, the soap will be smooth and pliable. Therefore, if the salt content lies in the neighborhood of 0.5 per cent and 0.2 per cent of sodium hyposulfite is added, it is necessary to add some material to the soap to increase this pliability.

Even in cases where the stabilizing effect of free alkali is used, the addition of the perfumes, and in some cases superfatting agents which are saponifiable will take up the free alkali and tend to accelerate decomposition of the soap itself. The addition, then, of the perfume during the milling and plodding of soap is an important factor. It is a well-known fact that certain aromatics have a tendency not only to cause rancidity, but also to spot and cause general discoloration of the cake of soap. The aromatic chemicals and essential oils should be free from impurities. As an example of this fact, it may be pointed out that small amounts of chlorine in benzyl acetate, a trace of trinitroxylol in artificial musk, especially musk xylene, will produce defects in soap, especially in a white cake.

Sometimes the aromatics and essential oils pick up traces of metallic impurities during storage. Old oil of lavender, for example, develops acidity upon aging and the acids thus formed react with the containers, passing the metallic salts into solution which in turn may cause spottiness in soaps. Many of the esters, aldehydes, phenols, etc. used for perfuming soap are hazardous when stored in iron or tin drums. It is, therefore, only natural that greater care must be taken in perfuming a pure white soap than is the case with colored soap. The cost of the perfume may be more expensive than is apparent if due care is not taken.

Not only does the contact of metal equipment during the boiling of the soap affect its quality, but the contact of soap with metals during the milling, plodding and pressing operations is equally dangerous. In many cases the use of copper plodder plates, brass pressing equipment and fittings introduces copper into the soap. Copper has even a more rapid catalytic action in causing spotting of soap than iron. In this regard it may be pointed out that a soap base protected with sodium hyposulfite is suspected to produce metallic sulfides when in contact with iron or brass, and accelerates the decomposition changes rather than retarding them. This is also the reason why this salt gives an off-odor.

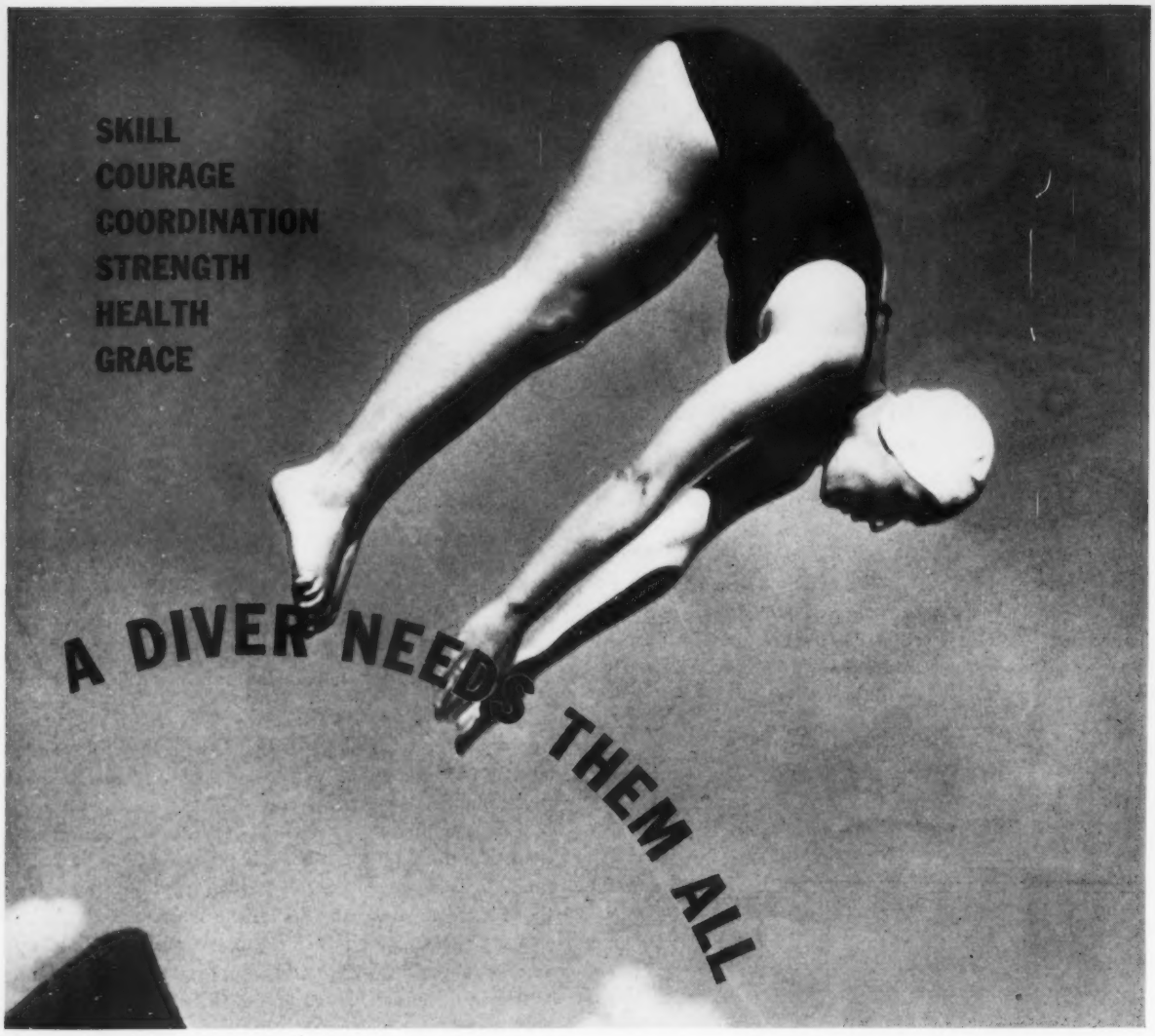
In order, then, to produce a soap which will not turn rancid or spot or discolor, it is necessary to make a most careful survey of not only the soap boiling methods but also every operation through which the soap passes subsequently. Great emphasis must be laid upon the perfume additions, as well as the contact of the soap with metals during the finishing operations. This discoloration of white soap particularly very often is a mystifying phenomena which can only be solved through a survey of every detail.

THE cracking of toilet soaps may be due to too high a percentage of salt in the soap or to too high a titer of the fatty acids, or to the use of an excessive amount of coconut oil in the soap base. Very often the cracking is due to improper milling and plodding. There is no question but that an excessive amount of salt greatly accelerates the cracking of a finished cake of soap. The amount of salt permissible in the soap base depends upon the fats and oils used therein. It is, therefore, impossible to give an exact and reliable figure as to the exact percentage of salt to be contained in toilet soaps. One soap of a certain titer, containing 1 per cent of salt will crack while a lower titer of softer soap will not. It is furthermore true that a soap of a fixed hardness will crack if 1 per cent salt is present, but will not crack if .6 per cent salt is present. As a general precaution it is advisable in all cases to wash out as much of the salt as possible previous to the finishing operation in the kettle.

Where cracking of a finished cake of soap is due to improper milling and plodding, it is probable that the uneven temperature of the soap coming from the mill to the plodder and the improper plodding due to excessive cooling in the compression cylinder influence this condition. The working pressure of the plodder may also be at fault. This can be controlled to some extent by increasing the size of the screw and decreasing the size of the holes in the baffle plate. Where the baffle plate is made up of smaller holes, however, the production is slowed up and it is, therefore, advisable not to exceed this. If it is carried on too far it may even cause the finished cakes to be hard and brittle.

In cases where cracking appears it is often desirable to correct the condition by additions in the amalgamator. This is done by adding up to 5 per cent of a good grade petrolatum and in some cases a paste of a sticky product like India gum. In this case about 1 per cent is employed. Dextrine and starch paste are also used. The petrolatum softens the soap base whereas the gums cause it to adhere during the plodding operation more tightly. It is advisable, however, to ascertain the cause of cracking rather than adding correctives which may or may not remove the cracks.

The above conditions are those which, in general, affect the appearance of the soap. In addition to these, it is desirable that after the soap has come from the soap press that it be well packed and protected, so as to get the finished bars into the consumers' hands in the most attractive manner and as soon as is reasonably possible. This is done by packaging the soap and protecting it against the atmospheric conditions of moisture, temperature changes, as well as storing it under favorable conditions.



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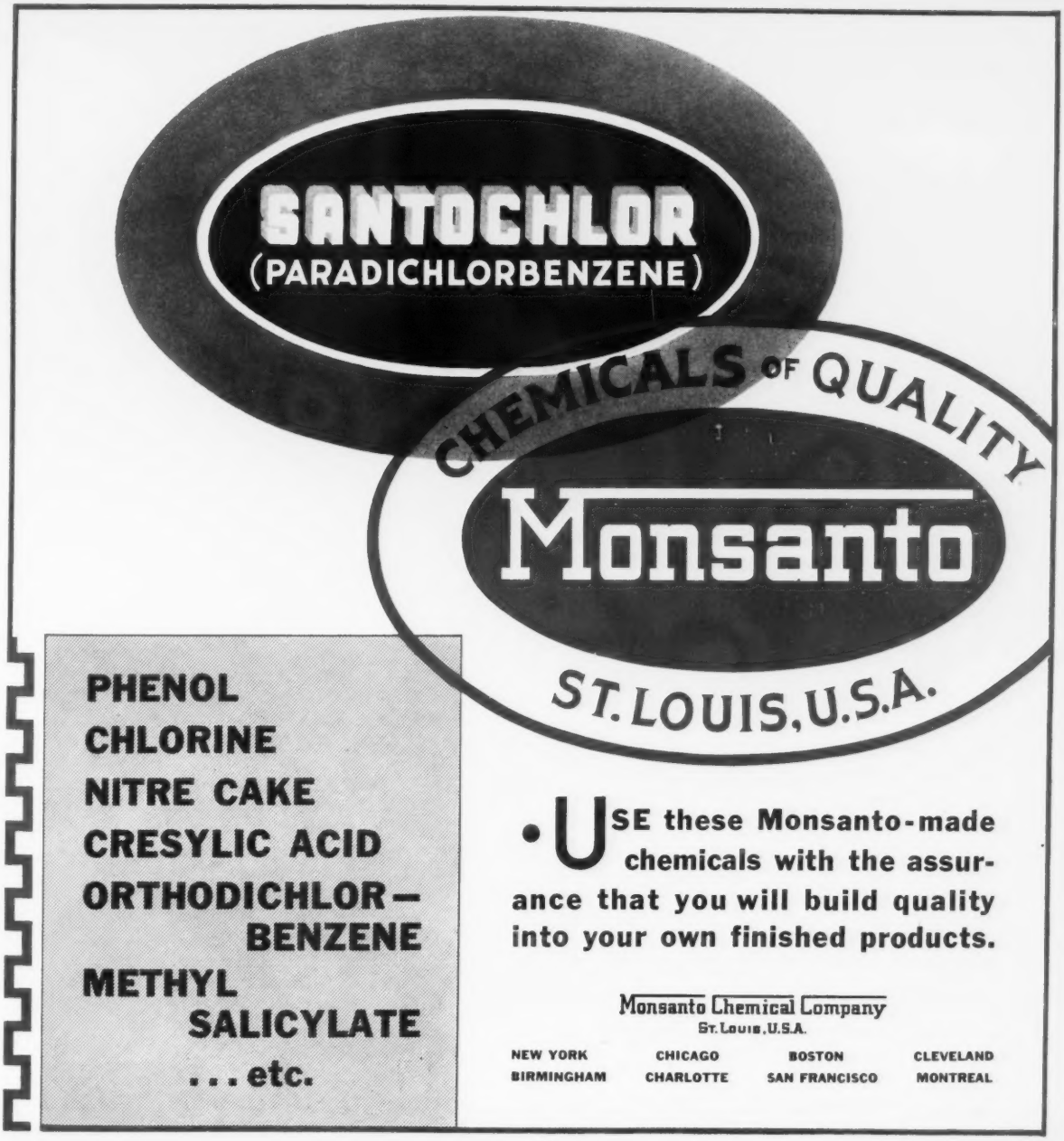

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Pyrocide 20 is also the best source of pyrethrins for livestock sprays. Combined with pine oil in a suitable mineral oil, Pyrocide 20 is used exclusively in many of the largest selling brands of livestock spray. Such sprays repel flies, as well as kill on contact.

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Gone are the days when a housewife dared not fly-spray her living-room. Today's sprays need not be ashamed in anyone's home—they can be made to smell agreeable.

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Express, mail or bring to our New York office one gallon of your spray, ***unperfumed.*** Tell

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This year promises to be a big fly-spray year.

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First of all, fly-spray makers have been advertising and have succeeded in making the public spray-conscious.

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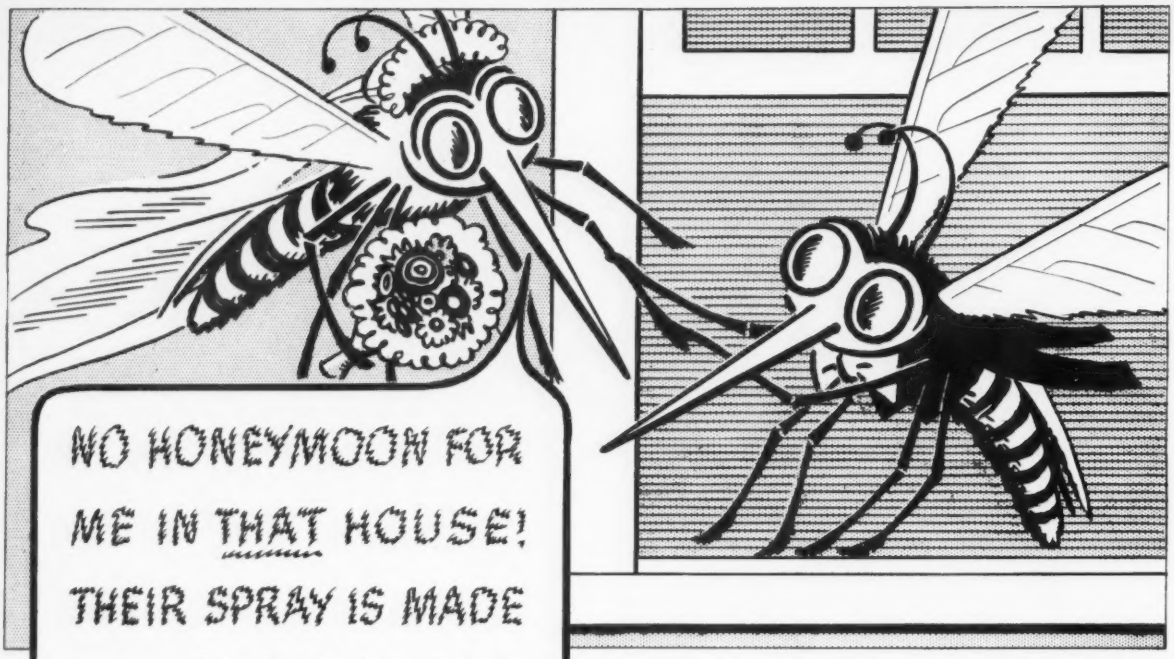

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THE PERFECTED PYRETHRUM CONCENTRATE

SUPER 20 · SUPER 30

Scientific precision—constant laboratory control—years of experience—exceptionally complete facilities . . . these are the factors which go to make PYREFUME an insecticide of high toxicity and uniform killing power.

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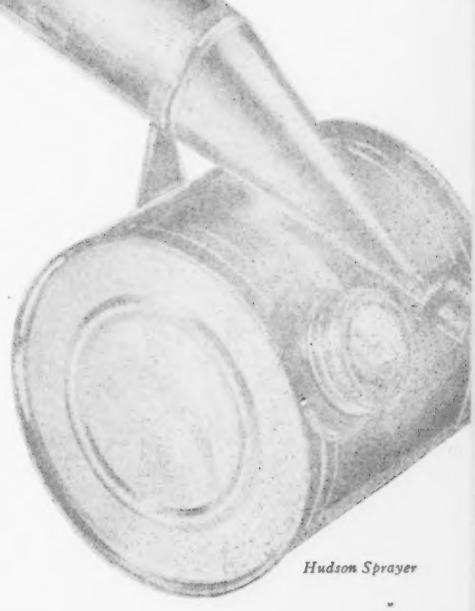

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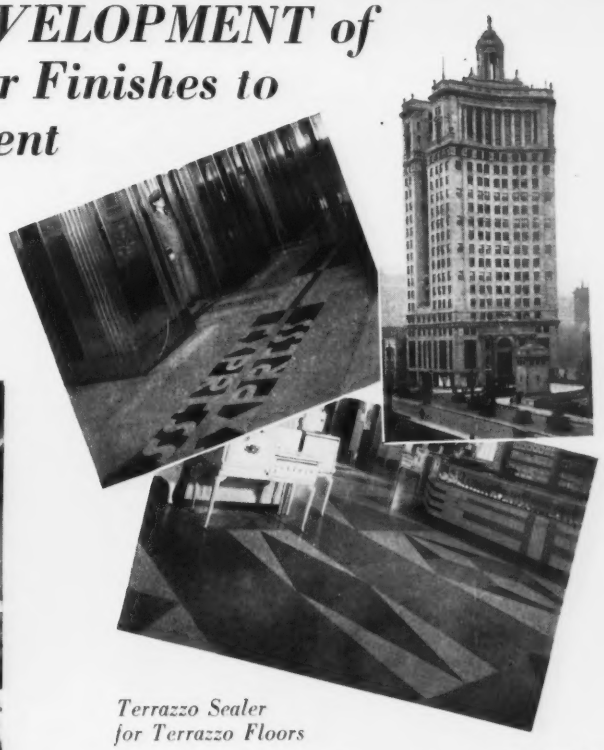

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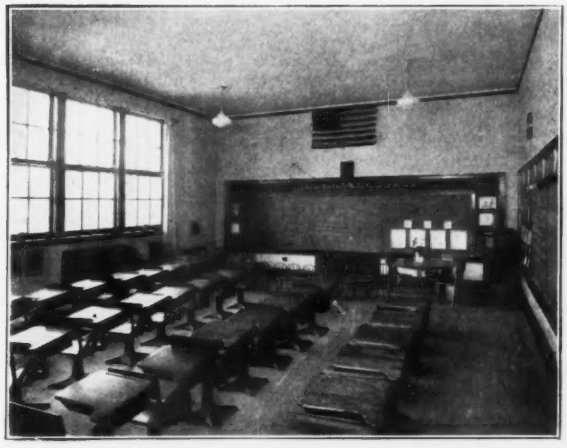

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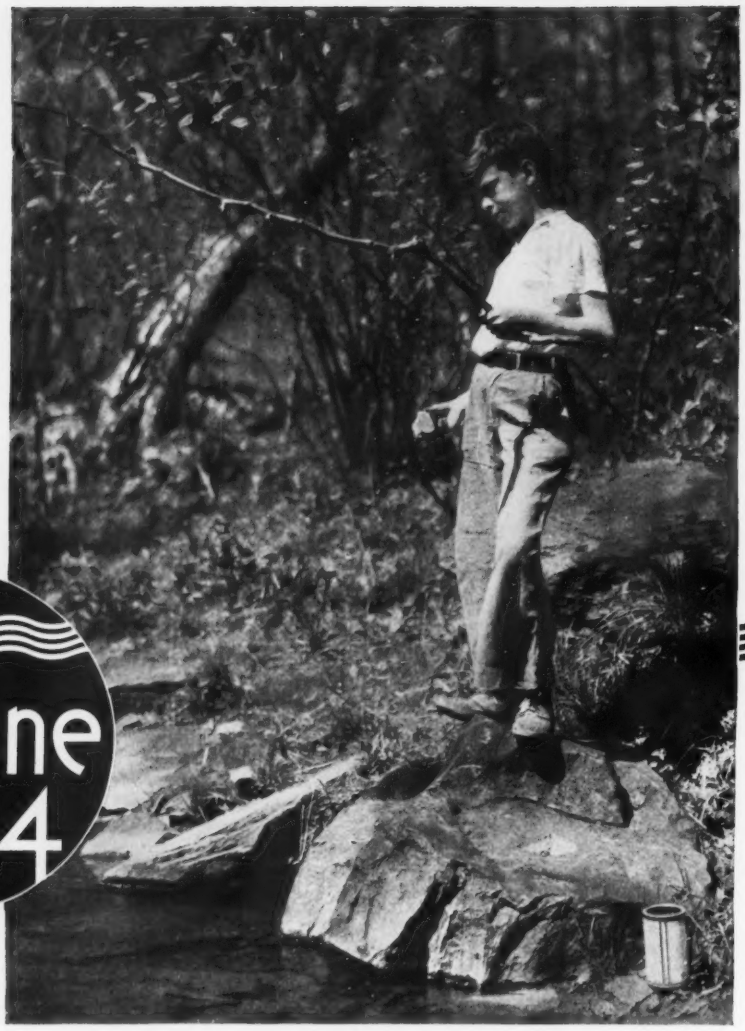

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WHY be pestered by mosquitoes? Use LETHANE 384 sprays to kill them quickly and drive the newcomers away. The repellent effect protects from new attacks over an extended period of time.

These sprays, in the proper petroleum carrier, are colorless, non-staining, stable, and agreeable to use. Let LETHANE 384 make your insecticide more than just "another spray."

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Repackers and resellers know that they can depend upon SOLVAY Para-dichlorobenzene for *Purity* and for *Uniformity* of action and gradation of sizes. Unvarying *Quality* accounts for this popularity.

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- **SOME INSECTICIDE**
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To these run-of-counter calls, clerks set out PACKAGED merchandise and the PACKAGE measures VALUE in consumer eyes. ● ONE SALE of the RIGHT QUALITY more than often leads to steady trade.

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Perfect atomization—years of trouble free service—Underwriters approval—safety, approved materials—all mean complete customer satisfaction.

Start 1936—build better business—by supplying your customers with the best sprayers.

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TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
COMPRESSOR TYPE
1 GALLON CONTAINER

Here is the finest sprayer ever built. Similar to the now widely used Tornado Model 54 and retaining the automatic time switch, volume air control and adjustable nozzle features, the new Model 36 will spray a big volume of insecticide great distances in finest gas formation.

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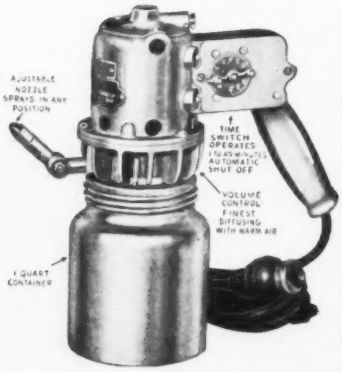
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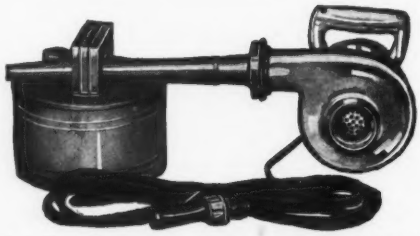
TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER

MODEL 54—1 QT. CAPACITY

It features an automatic time switch set at any point from 1 to 45 minutes—sprays desired amount without any attention whatever — automatically shuts off. Can also be used for hand spraying. Adjustable nozzle can be set for spraying in any position. Also exclusive volume control adjustment permits spraying one ounce every two to four minutes with either fine or heavy spray. MODEL 53 same as Model 54 except does not have automatic time switch.

Model 50 Fan Type unit. A fine insecticide atomizer. Sprays distance of 8′ to 10′. ⅛ H.P. G.E. Universal Motor, 1 pint glass jar. 20′ of rubber covered cable.



Model 6 Fan Type unit. Will break insecticide into a very fine mist. Sprays 18′ to 20′. 1/3 H.P. G.E. Universal Motor. Norma Ball Bearings, 1 gallon metal container. This model is for larger institutions, warehouses, industrials, etc., and is also highly recommended for moth-proofing solutions. Write today for complete description and circulars.

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● Preserving goodness . . . insuring purity . . . offering new protection and convenience for those who *buy!* Creating goodwill . . . new sales appeal . . . greater ease in marketing . . . for you who *sell!* These are but three of many revolutionary changes in product packaging, pioneered by the American Can Company. This company has always sought to meet the packaging needs of industry *before* they arise — to help manufacturers meet their customers the way they want to be met; with better things brought to them in new and better ways.

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An efficient liquid household insecticide of the pyrethrum type, pleasantly scented. Surpasses in effectiveness the standard of the National Association of Insecticide and Disinfectant Manufacturers. Each lot carefully controlled by the Peet-Grady method. Supplied in bulk for distributors to resell under their own trade-names. Also suppliers of pyrethrum concentrate.

PINE OIL DISINFECTANTS

made from pure steam-distilled pine oil, and agreeable in odor and dilute with water to form rich, milk-white emulsions.

HIPINE, made according to the formula of the Hygienic Laboratory has a minimum phenol coefficient of four.

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SANITARY PRODUCTS

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

THE evaluation of liquid insecticides by comparison with a standard sample is the most recently completed plan of the Insecticide Standardization Committee of the National Association of Insecticide & Disinfectant Manufacturers. The plan is being submitted to the Association in session in Chicago. A standard liquid insecticide will be supplied to the industry generally at nominal cost by the Association. Against this standard, sprays may be tested by the Peet-Grady Method with a far greater chance of comparable results from different laboratories, and with something approaching uniformity in ultimate calculations of comparative effectiveness.

The committee which worked out the plan is to be commended. It is the most practical method yet proposed for obtaining comparable figures from Peet-Grady Tests. Those who want true figures, honestly comparable, can secure them. Those who still merely want laboratory reports showing high kill figures, irrespective of how these figures are obtained, can still "modify" their tests and results to meet their requirements. The fact remains that a standard will be set up for those who wish to determine honestly the comparative merit of their products.

—♦—

THE State of Colorado is building a factory at one of the state prisons to manufacture insecticides and soaps for its public institutions. The reason advanced for this new plant is that work will be given to a certain group of dangerous criminals for whom there is a lack of work at present. Very probably in the back of the head of some official the idea exists also that the state is going to save money by making its own soaps, insecticides, and the like. At present prices, we fear this hope will not be realized. And as for quality,—very probably the users among the state institutions will have a few ideas on this subject at a later date. Of course, the Colorado law forbids the sale of prison-made goods outside of public institutions in competition with private industry.

As has been pointed out before, the number of men who can be employed in a prison soap and sanitary products plant is woefully small. If the prison authorities really want to find work for excess labor, they could not have selected a group of products more unsuitable for the purpose. And if it is to save money,—as we have said, the state is going to be sadly disappointed.

—♦—

WHAT is thus far the cleverest reference to the worthlessness of low grade insecticides, acquired by federal government, states, counties, and cities on public bid at low prices, was included in the recent comments of a well-known insecticide manufacturer. Discussing the purchase of insecticides by public agencies at prices below the cost of the raw materials, he had this to say: " . . . one would wonder why these people bother buying insecticides, as their apparent desire is to be stung, and this could just as well be done by the insects as by the manufacturer."

—♦—

RECOMMENDATION of the use of ordinary coal-tar disinfectants as dormant sprays for trees, as has been done in some instances, we are informed, is stated to be dangerous and may provoke damage suits. Only disinfectants made with high-boiling acids are held to be suitable for these sprays. Others are very likely to cause damage even to dormant trees. It is suggested that before recommending their disinfectants for this purpose, manufacturers look further into the matter.

Insecticide-Disinfectant

W. B. Eddy
. . . president, is presiding

John Powell
. . . treasurer, is handling the money

John H. Wright
. . . secretary, made the arrangements

H. M. Clark
. . . chairman, disinfectant sessions

W. G. Griesemer
. . . chairman, insecticide sessions

MANUFACTURERS of insecticides, disinfectants, and sanitary products, represented by the membership of the National Association of Insecticide & Disinfectant Manufacturers, are holding their twenty-second annual mid-year meeting June 8 and 9 at the Edgewater Beach Hotel, Chicago. The two-day session was preceded by a golf tournament on June 7 at the Bob-O-Link Country Club. The meeting comes to a close on Tuesday evening, June 9, with an informal beef steak dinner and floor show in the Michigan Room of the Edgewater Beach Hotel.

The most important subject up for discussion at the Chicago meeting is the adoption of a standard liquid insecticide by the Association for comparative testing purposes of commercial sprays. This recommendation is included in the report of the Insecticide Specification and Standardization Committee, headed by Wallace Thomas of the Gulf Refining Co., Pittsburgh. The standard insecticide base for use in testing the kill of commercial insecticides as compared with the standard, is to be made up and distributed under standard conditions by the Association at nominal cost to all manufacturers and laboratories, according to the proposal. All sprays would then be rated, not on a straight Peet-Grady kill basis, but on a kill basis as compared with the kill of the standard product at the same time.

Among other speakers are Dr. E. A. Back of the Bureau of Entomology and Plant Quarantine on "Carpet Beetles." Henry A. Nelson of the Chemical Supply Co., Cleveland, is discussion leader on the subject of "Moth Damage Prevention Advertising." A report on the general disinfectant situation is being presented by H. Marshall Clark of Dr. Hess & Clark, Inc., Ashland, O. "Dips and Disinfectants in Animal Diseases" is the subject of a paper by Dr. J. R. Mohler of the U. S. Bureau of Animal Industry. B. G. Philbrick of Skinner & Sherman of Boston is discussing "Effect of Variations of Culture Medium Upon the Resistance of Staph. Aureus." Melvin Fuld of Fuld Brothers, Baltimore, is presenting a paper on the problems of the sanitary supply manufacturer and dealer.

Dr. E. G. Thomssen, chief chemist of J. R. Watkins Co., Winona, Minn., is addressing the meeting on the "Extended Uses of Coal Tar Disinfectants." Secretary John H. Wright is reporting on legislative developments of the past six months and their possible effects on the industry. W. G. Griesemer of the Black Flag Co., Baltimore, is discussing the general insecticide situation from the angle of sales and distribution. "Methods of Testing Insecticides" is the subject of a paper by Dr. Alfred Weed.

W. B. Eddy of the Rochester Germicide Co., Rochester, N. Y., president of the Association, is presiding at the meeting, although special sessions are in charge of vice-presidents Griesemer and Clark. General convention committees are in charge of John H. Wright, secretary, with H. W. Hamilton of the White Tar Co., Kearny, N. J. in charge of the program, John Powell of John Powell & Co., New York, in charge of arrangements, A. L. van Ameringen of van Ameringen-Haebler, Inc., New York, in charge of entertainment.

The program follows:

Program

Monday—June 8th, 1936
Morning Session

9:00 A.M.—Registration
10:00 A.M.—Meeting called to order
Announcements
Communications

Meeting in Chicago

H. W. Hamilton
. . . he made up the program

A. L. van Ameringen
. . . he is in charge of entertainment

Address of the President. W. B. Eddy, Rochester Germicide Co., Rochester, N. Y.
Report of the Secretary and Chairman of the Legislative Committee. John H. Wright, New York.
Report of the Treasurer. John Powell, John Powell & Co., New York.
Appointment of Committees
Report of the Entertainment Committee. A. L. van Ameringen, van Ameringen-Haebler, Inc., New York.
Roll Call
Introduction of visiting guests
Report of the Membership Committee. Russell Young, Chairman, Davies-Young Soap Co., Dayton, Ohio.
Report of the Publicity Committee. Ira P. MacNair, MacNair-Dorland Co., New York.

Afternoon Session

2:00 P.M.—Meeting called to order
Announcements
Report of the General Insecticide Committee. W. G. Griesemer, The Black Flag Company, Baltimore, Md.
Report of the Insecticide Specification and Standardization Committee. Wallace Thomas, Gulf Refining Co., Pittsburgh, Pa.
Methods of Testing Insecticides. Dr. Alfred A. Weed, John Powell & Co., New York.
"Carpet Beetles, The Increasing Household Menace." Dr. E. A. Back, Principal Entomologist—Insects Affecting Men and Animals, Bureau of Entomology and Plant Quarantine, U. S. Dept. of Agriculture, Washington, D. C.
Moth Prevention Advertising. (Discussion leader)—Henry A. Nelson, Chemical Supply Co., Cleveland, Ohio

Tuesday—June 9th, 1936
Morning Session

10:00 A.M.—Meeting called to order
Announcements
Report of the National Councillor to the U. S. Chamber of Commerce, C. P. McCormick, McCormick & Co., Baltimore, Md.
Report of the Disinfectant Specification and Standardization Committee. J. L. Brenn, Huntington Laboratories, Inc., Huntington, Ind.
Report of the General Disinfectant Committee. H. Marshall Clark, Dr. Hess & Clark, Inc., Ashland, Ohio
"Dips and Disinfectants in the Warfare Against Animal Diseases." Dr. J. R. Mohler, Chief of the Bureau of Animal Industry, U. S. Dept. of Arriculture, Washington, D. C.
"A Joint Study of the Effect of Variations

For the tenth consecutive year, the insecticide and disinfectant manufacturers are holding their mid-year meeting at the Edgewater Beach Hotel, Chicago. View of the hotel from Lake Michigan.

Program

(Continued)

of the Culture Medium Upon the Resistance of Staph. Aureus." B. G. Philbrick, Skinner & Sherman, Inc., Boston, Mass.

"What the Sanitary Supply Dealer Expects From Us As An Association." Melvin Fuld, Chairman of the Committee on Sanitary Specialties, Fuld Brothers, Baltimore, Md.

Report of the Committee on Antiseptics. Dr. G. F. Reddish, Lambert Pharmacal Co., St. Louis, Mo.

Luncheon

Afternoon Session

2:00 P.M.—Meeting called to order
Announcements
Reports of Committees
A Discussion of the Uses of Disinfectants, Insecticides and Sanitary Specialties During and After Floods. "Extended Uses of Coal Tar Disinfectants." Dr. E. G. Thomssen, J. R. Watkins Co., Winona, Minn.
New Business
Unfinished Business
Adjournment
7:00 P.M.—Beefsteak Dinner

At the meeting, proposed standard specifications for coal-tar and pine disinfectants are being presented by the Disinfectant Standardization Committee, headed by J. L. Brenn of the Huntington Laboratories, Inc., Huntington, Ind. Owing to complications, no specification for hydrochlorite disinfectants is being proposed at this time. An outline of the proposed specifications follows:

Coal Tar Disinfectant Coefficient 5

Phenol Coefficient:—Not less than 5 as determined by F.D.A. Method.

Benzophenol Content:—Less than 5 per cent by Chapin Method.

Water Content:—Total amount shall not exceed 9 per cent.

Tar Acid Content:—Shall not be specified but must be sufficient to give, with the soap and neutral oils, a coefficient of 5 in the finished compound without addition of foreign products to boost coefficiency thus rendering stability uncertain.

Hydrocarbon Content:—Shall contain not less than 65 per cent nor more than 75 per cent of tar acids and neutral oils combined and shall contain no added mineral oil or adulterants.

Soap Content:—Shall not be specified but shall be altered to give satisfactory emulsions.

Solubility:—Readily mixes with water having hardness up to four hundred parts per million calcium chloride at temperatures as low as 15°C.

Freezing Point:—Shall be freely liquid without clouding when chilled to 0°C. and held there for several hours.

Emulsions:—When 5 cc. are added to 95 cc. of distilled water at temperatures of 4°C., room temperature and 37½°C. and shaken thoroughly, resulting emulsions shall be milky white to light brown or gray without appearance of oil globules on surface or black sediment on bottom after two hours. After twenty-four hours there shall not be more than a trace of oil float or black sediment.

Color:—Clear dark brown to reddish brown liquid.

Specific Gravity:—1.025 to 1.045 at 15.5°C.

Coal Tar Disinfectant Coefficient 2

Phenol Coefficient:—Not less than 2 as determined by F.D.A. Method.

REPORTS OF ADDRESSES

Papers, reports, and addresses delivered at the 23d annual mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers at Chicago on June 8 and 9 will be published in full in the July issue of SOAP insofar as they are available for publication at that time. The July issue will be published on July 1.—The Editors.

Benzophenol Content:—Less than 5 per cent by Chapin Method.

Water Content:—Total amount shall not exceed 9 per cent.

Tar Acid Content:—Shall not be specified but must be sufficient to give, with the soap and neutral oils, a coefficient of 2 in the finished compound without addition of foreign products to boost coefficiency thus rendering stability uncertain.

Hydrocarbon Content:—Shall contain not less than 65 per cent nor more than 75 per cent of tar acids and neutral oils combined and shall contain no added mineral oil or adulterants.

Soap Content:—Shall not be specified but shall be altered to give satisfactory emulsions.

Solubility:—Readily mixes with water having hardness up to four hundred parts per million calcium chloride at temperatures as low as 15°C.

Freezing Point:—Shall be freely liquid without clouding when chilled to 0°C. and held there for several hours.

Emulsions—When 5 cc. are added to 95 cc. of distilled water at temperatures of 4°C., room temperature and 37½°C. and shaken thoroughly, resulting emulsions shall be milky white to light brown or gray without appearance of oil globules on surface or black sediment on bottom after two hours. After twenty-four hours there shall not be more than a trace of oil float or black sediment.

Color:—Clear dark brown to reddish brown liquid.

Specific Gravity:—1.025 to 1.045 at 15.5°C.

Coal Tar Disinfectant Coefficient 15

Phenol Coefficient:—Not less than 15 as determined by F.D.A. Method.

Benzophenol Content:—Less than 5 per cent by Chapin Method.

Water Content:—Total amount shall not exceed 10 per cent.

Tar Acid Content:—Shall not be specified but must be sufficient to give, with the soap and neutral oils, a coefficient of 15 in the finished compound without addition of foreign products to boost coefficiency thus rendering stability uncertain.

Hydrocarbon Content:—Shall contain not less than 65 per cent nor more than 75 per cent of tar acids and neutral oils combined and shall contain no added mineral oil of adulterants.

Soap Content:—Shall not be specified but shall be altered to give satisfactory emulsions.

Solubility:—Readily mixes with water having hardness up to four hundred parts per million calcium chloride at temperatures as low as 15°C.

Freezing Point:—Shall be freely liquid without clouding when chilled to 0°C. and held there for several hours.

Emulsions:—When 2 cc. are added to 98 cc. of distilled water at room temperature and shaken thoroughly, resulting emulsion shall be milky white or light brown or gray without appearance of oil globules on surface or black sediment on bottom after two hours. After

(*Turn to Page* 127)

Testing Fly Sprays

Modified Procedure in Testing Petroleum Base Insecticides by the Settling Mist Method

By A. E. ZERMUEHLEN and T. C. ALLEN

*University of Wisconsin**

IN PREPARATION for testing the toxicity of certain insecticides to house flies (*Musca domestica*) in the Department of Economic Entomology, an inexpensive but rapid laboratory apparatus was used. Several laboratory methods for testing contact insecticides have been previously described and although these methods are reliable and relatively accurate in procedure, they consumed considerable time. Consequently, an attempt has been made to simplify the procedure without impairing the accuracy in testing for comparative toxicity.

In more recent laboratory methods for testing house flies, an oil-base has been generally used as the dispersing medium. The toxicity of an insecticide can be determined by subjecting insects to minute quantities of finely divided mist. Tattersfield and Morris[6] used this principle in 1924 by atomizing extracts directly to aphids within a glass cylinder. More recently, Campbell, Sullivan, and Jones[1]; Campbell and Sullivan[2]; Jones, Campbell and Sullivan[5] developed a very satisfactory method for testing kerosene-base insecticides against house flies. By this method, insects are enclosed in a six-inch Petri dish and subjected to the settling kerosene mist within a large glass cylinder filled with vapor. The vaporized insecticide is released from the jar when it is placed above a container of flies.

In general, the method described in the present paper, parallels in many respects, the method developed by the above workers [1], [2], [5]. A slight variation however, has been made from this method. The difference is essentially in the method of exposing insects to the settling mist, and the elimination of transferring the treated flies to separate observation cages.

Method

The method used for testing kerosene-base insecticides involve the following procedure: Place approximately 60 five-day-old chilled flies within a cylindrical screened cage two inches deep and five and one-half inches in diameter (Plate 2). The walls of this container are of rolled steel to which is soldered a No. 14 mesh wire screen on the bottom and on the removable top. This container, filled with flies, is suspended by the flanged or overlapping cover of the container in a circular opening flush with the surface of the table (Plate 1-a). A sheet of paper is placed entirely over the container which excludes the flies from a bell jar placed directly above (Plate 1-b). The bell jar, 50 cms. high and 26 cms. in

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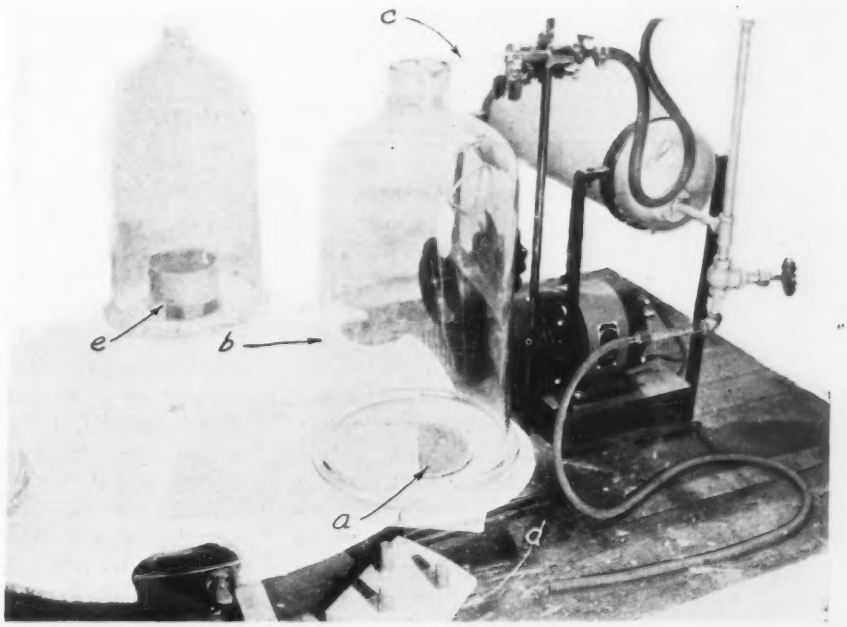

Plate 1.
View of laboratory equipment employed for testing toxicity of insecticides showing container, a, suspended flush with table by a flanged cover. The bell jar b, is placed over the paper and above the container, and is filled with vaporized insecticide from nozzle, c. A trap door, d, closes the circular opening from below suspending the cage well above the table as shown in e.

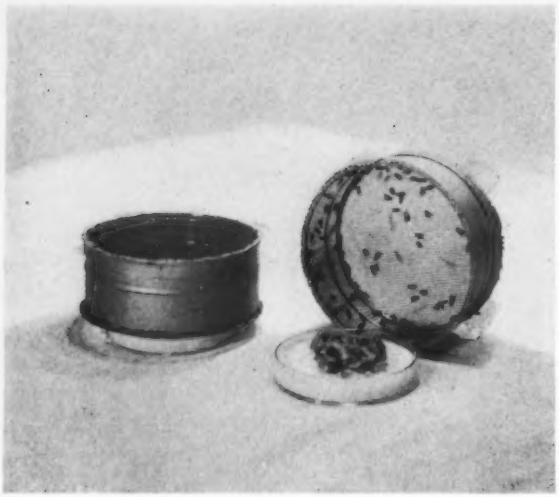

Plate 2.
Type of screen wire cages developed for exposing flies to the settling insecticide and the method of feeding the insects in the cages from a sponge soaked in milk.

diameter, is filled with 2 cc. of insecticide by a No. 16 De Vilbiss suction-fed atomizer at 20 pounds pressure (Plate 1-c).

After 2 cc. of extract is vaporized into the chamber, the air is shut off at the nozzle and ten seconds is allowed to elapse before the sheet of paper is withdrawn to expose the container of flies to the settling mist. As the paper is withdrawn, a trap door (Plate 1-d) on which three small projecting corks are centrally attached pushes the container of flies up into the chamber and at the same time closes the circular opening in the table from below. The trap door is held in place against the table by a catch and in this position (Plate 1-e) the container of flies rests upon the corks within the chamber and well above the surface of the table. The settling vapors can now pass through the screen cage, greatly eliminating the possible accumulation of toxic residues.

Following an exposure period, the bell jar is removed and the cage confining the insects is set aside for observation. It is not necessary to transfer the flies to separate observation cages after exposure to the vapor. The screened cage is placed directly on a Petri dish containing a sponge soaked in milk (Plate 2). Flies feed from the sponge which is in contact with the wire screen. Mortality counts were made by holding the screened container up to a strong light and observing, at close range, the flies unable to move in the bottom of the container. A sudden jar of the cage aids considerably in distinguishing the inactive flies. The final mortality counts were derived after allowing the live flies to escape.

This method of testing flies may be used for large scale toxicity tests if several bell jars and a number of cages are employed. Successive use of a single bell jar results in an accumulation of condensed vapor upon the inner surface, but this can be eliminated by cleaning the bell jar or by using several bell jars and permitting time for evaporation. Two cubic centimeters of the spray gave ample distribution of vapor without undue condensation on either the walls of the bell jar or the fly cages during the tests. This same quantity of insecticide was also sufficient to produce the desired toxic effect by varying the time of exposure. The exposure periods may vary from one to six minutes depending upon the strength of the insecticide.

Studies of Oil Droplets

A study of the settling vapor within the bell jar was made on carbonized glass at various intervals. Methods for similar studies have been employed by Ginsburg[4] and French[5]. Measurements of oil particles exposed to carbonized glass revealed that considerable variation in size of oil droplets existed at different exposure intervals following atomization.

A ten-second interval was allowed to elapse before flies were subjected to the mist. Microscopic examinations of the oil deposits upon carbonized glass placed at the bottom of the bell jar immediately after atomization, showed that the droplets within the settling spray were larger, more irregular in size, and more unevenly distributed than those which settled at later periods. A measure of the relative size of droplets was recorded as follows: The size of droplets immediately after atomization ranged from .108 to .337 mm. in size. At 8 to 10 seconds, the vaporized particles settled more regularly and were more uniform in size. The droplets deposited at these intervals ranged from .027 to .018 mm. in diameter. After a period of 10 seconds the size of the droplets decreased somewhat, but distribution remained quite constant. This insured a more uniform distribution of toxic ingredients for testing the flies within the chamber. Results from tests with the red spider mite, indicated that the time factor is significant. Considerable variation in toxicity was obtained when mites were subjected to the mist immediately after atomization as compared to quite constant results in tests where a 10-second interval was allowed to elapse.

Toxicity of Spray Residue

A comparison was made of the toxicity of vaporized insecticides to flies confined in the solid-bottom and in the screened type of exposure cages. The solid-bottom type was prepared by sealing the bottom of a cage with carbonized glass. The two cages were then subjected to vapors within the chamber at various short intervals. Examination of the mist deposited in the solid-bottom cage indicated that the distribution of vapor was not uniform. The concentration of the settling vapors decreased near the walls of the container. Tests made with the screen cages in this same manner showed an even deposition of vapor, indicating that an undisturbed distribution of mist existed. No evidence has been obtained, however, to show that the uneven distribution of

mist within the solid-bottom container may be a possible source of error in experimental testing.

Studies of the residual effect of vaporized insecticides against house flies in screened and solid-bottom exposure cages showed distinct differences in the toxicity. Parallel tests of the settling mist with flies exposed in these two types of cages resulted in a greater per cent kill of flies in the solid-bottom type container (Table 1, tests 1 and 2). Flies exposed in a similar manner to the mist and then immediately removed to separate observation cages, showed an increase in mortality due to toxic residues which accumulated in the solid-bottom type of container (Table 1, tests 3 and 4). Jones, H. A., Campbell, F. L., and Sullivan, W. N.,[4] employ Petri dishes as testing cages; in the bottom of which is placed filter paper in order to eliminate effects of spray deposits upon house flies.

Further tests showed that the accumulation of toxic residues varied within the two types of cages. In these trials, flies were inserted in the cages after the cage had been previously exposed to the insecticide. The percentage of kill was much greater in the solid-bottom type of cage (Table 1, tests 5 and 6).

Discussion

Considerable differences in kill of flies are shown in Table 1, following comparable applications of pyrethrum and derris. The explanation of such results may not be entirely due to the strength of the extract, but rather to the nature of the extract itself. Rapid acting toxins as pyrethrum or thiocyanates cause immediate "knock-down" of flies which come in contact with spray deposited within the cage. A slow acting toxin as derris, causes no such abnormal behavior of the insect and the accumulation of additional quantities of insecticide is lessened during the exposure period to the mist. It is therefore evident in relative testing of insecticides that the residue factor may frequently account for an increased toxicity when applying rapid acting ingredients.

Total elimination of the residues within the exposing chamber is desirable. Screen wire exposing cages as used in the present method for testing flies reduces the surface area exposed to the settling mist, consequently decreasing the accumulation of unfavorable residue. By employing a large wire mesh screening and by constructing the cage from very fine wire strands, entire elimination of the residue factor may be possible.

Summary

1. A modified laboratory method has been developed which employs a screen wire testing cage for subjecting flies to a vaporized kerosene-base insecticide.
2. The relative size and distribution of oil droplets within the bell jar following atomization, varied considerably as the mist settled.
3. Size of oil droplets deposited on carbonized glass within the screen and the solid-bottom type of cage showed that a more even distribution of mist occurred within the screen type of cage.
4. Comparative toxicity tests with flies treated in screened and in solid-bottom cages, showed that the accumulation of toxic residues were decidedly less effective in the screen type. It was therefore possible to eliminate the procedure of transferring flies to separate containers following the exposure of the cages to the insecticide.

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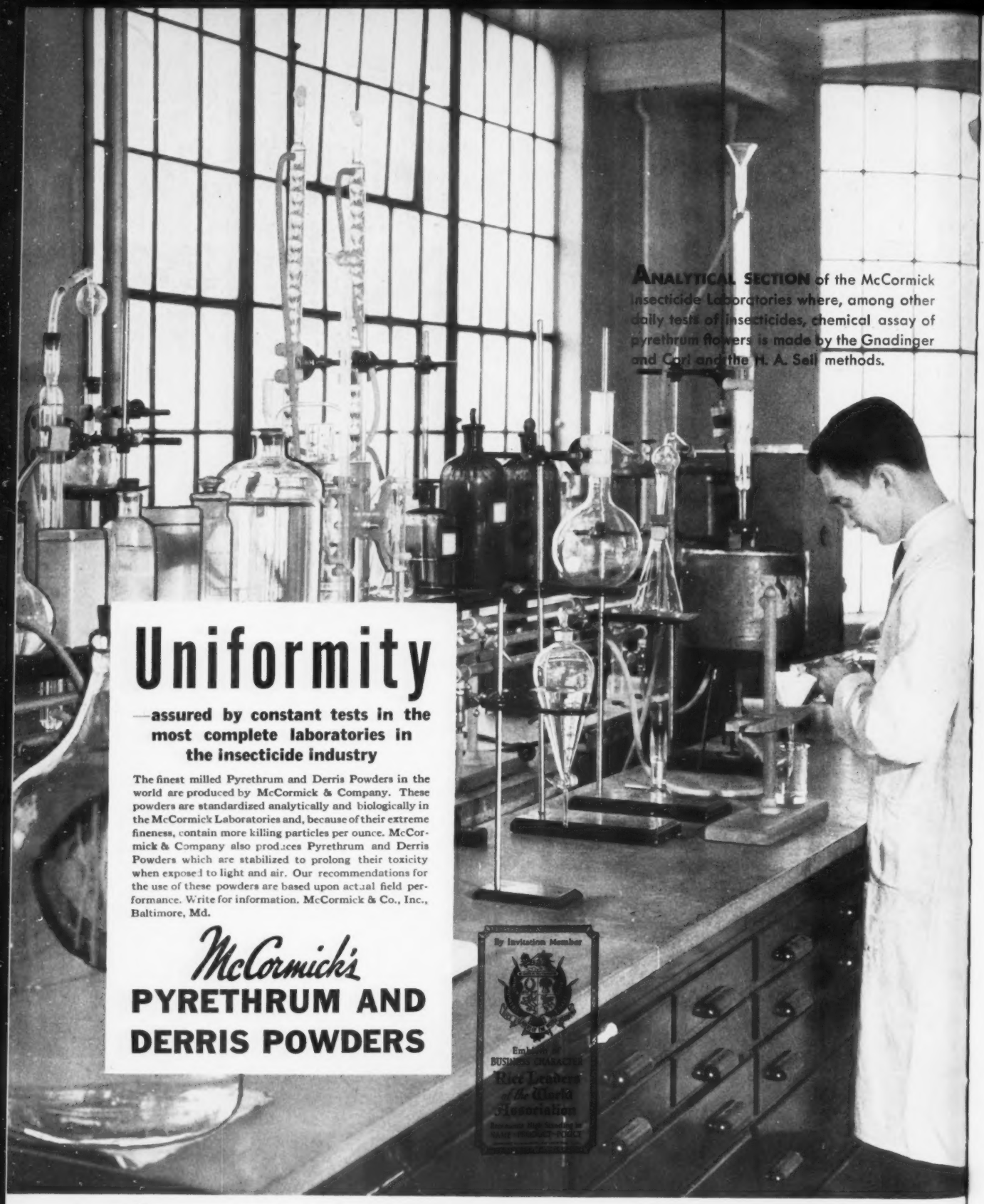
3. *French, O. C.* 1934. Machinery for applying atomized oil sprays. Ag. Eng., *15*: (9) 324-6.
4. *Ginsburg, J. M.* 1934. Industrial research bulletin No. 34, Series I. Mimeo. L. Sonneborn Sons, Inc.
5. *Jones H. A., Campbell F. L. and Sullivan, W. N.* 1935. Cracca—A source of insecticides. Soap *11*: (9) 99-109.
6. *Tattersfield, F. and Morris, H. M.* 1924. Apparatus for testing the toxic value of contact insecticides. Bull. of Ent. Research *14*: (3) 223-33.

Table 1. Toxicity of derris and pyrethrum to flies exposed to vaporized insecticide within the screened and the solid-bottom type of container.

Test	Kerosene extract*	Exposure period	No. of tests	Total flies tested	Per cent kill in screened container	Per cent kill in solid-bottom container	Per cent variation
1	1 per cent derris[1]	2 minutes	2	147	3	48	45
2	2 per cent pyrethrum[2]	2 minutes	2	131	19	100	81
3[3]	3 per cent derris	2 minutes	2	49	75	100	25
4[3]	5 per cent pyrethrum	4 minutes	2	41	45	84	39
5[4]	3 per cent derris	2 minutes	5	127	1	79	78
6[4]	5 per cent pyrethrum	2 minutes	4	70	9	97	88

* Sayboldt viscosity at 100—30/35.
[1] Acetone extract of derris containing 5 grams rotenone to 100 cc.
[2] Basic pyrethrum extract containing 2.1 to 2.2 grams pyrethrins I and II to 100 cc.
[3] Flies transferred to separate observation cages one minute after exposure to the mist.
[4] Flies inserted into the screened and solid-bottom types of containers exposed previously to the mist.



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Antiseptic Testing

Comments on the National Formulary VI Standard of Resistance for Staphylococcus Aureus in the Testing of Liquor Antisepticus, N. F.

By GEORGE F. REDDISH, Ph.D.

Chairman Antiseptics Committee, National Association Insecticide & Disinfectant Manufacturers

AS chairman of the Antiseptics Committee of the National Association of Insecticide and Disinfectant Manufacturers, I consider it my duty to comment on the recent standard for *Staphylococcus aureus* which has been adopted by the National Formulary Committee for use in National Formulary VI. This standard was presented to the Scientific Section of the American Pharmaceutical Association at the Portland meeting in August, 1935, and was recently published in the Journal of the American Pharmaceutical Association by Meyer and Gathercoal[1]. Since the phenol resistance of *Staphylococcus aureus* established by Meyer and Gathercoal for National Formulary VI is at variance with that accepted by the U. S. Food and Drug Administration and specified in Circular 198 of the U. S. Department of Agriculture[2], it is important to determine the reason for this difference and to make such changes as may be necessary to bring the two standards into complete harmony.

Meyer and Gathercoal are the only bacteriologists, as far as I know, who have experienced any difficulty in getting the resistance to phenol specified in Circular 198 when the F. D. A. strain (No. 209) of *Staphylococcus aureus* is used. While it is admitted that there will be day-to-day variations in resistance of microorganisms grown under artificial conditions, it has been my experience, as well as that of others working in this field, that the F. D. A. strain of *Staphylococcus aureus* (No. 209) very seldom varies from the maximum standard given in Circular 198, and almost never falls below the minimum standard. When the culture does fall below the minimum standard of resistance it means that the organism has become weakened for some reason. Such a weakened culture should not be used in the test. The standard of resistance should not be lowered to include occasional weakness on the part of the culture, but such weakened cultures should not be employed in the test.

It is unfortunate that the N. F. VI standard of resistance should be different from the F. D. A. standard. This variation will cause considerable confusion and will even lead to the use of weak cultures by unscrupulous manufacturers of antiseptics. The standard adopted by N. F. VI allows for a culture of *Staphylococcus aureus* which will be killed by 1—80 phenol within 5 minutes at 37° C. and by 1—90 phenol in 15 minutes at 37° C. The results obtained when the F. D. A. broth is made as described in Circular 198 are as follows: no killing by 1—80 phenol in 5 minutes at 37° C. and no killing by 1—90 phenol in 15 minutes at 37° C. Occasionally 1—90 phenol will kill *Staphylococcus aureus* by this test in 15 minutes at 37° C., but 1—80 phenol never kills in 5 minutes. This is the resistance to phenol of a *normal, resistant* culture of *Staphylococcus aureus*. A culture of *Staphylococcus aureus* which is killed by 1—80 phenol in 5 minutes is weak and should *not* be used for testing antiseptics. The use of such a weakened culture will give results which will indicate that the antiseptics tested are more germicidal than they actually are against normal, resistant organisms. The use of such weak cultures should not be allowed in *any* standard test.

It is an established and accepted fact that by the F. D. A. Method a normal, resistant strain of *Staphylococcus aureus* will not be killed by 1—80 phenol in 5 minutes at 37° C. This is the standard of resistance which has been officially adopted by the U. S. Food and Drug Administration after years of research and experience in this field. There is no reason for having a lower standard, but there are many reasons why the present F. D. A. standard should be retained. The National Formulary Committee should investigate this matter further with a view to adopting a standard of resistance for this test organism which will be equal to the present F. D. A. standard. The Antiseptics Committee of the National Association of Insecticide and Disinfectant Manufacturers offers its services to the National Formulary Committee to this end. This is one of the most important matters that has come to the attention of this Antiseptics Committee in many years and it is sincerely hoped that further effort will be made to arrive at a satisfactory adjustment of these differences.

References

[1]The F. D. A. Test for Antisentic Value of Liquor antisepticus. Esther Meyer and E. N. Gathercoal. Journal of the American Pharmaceutical Association, XXV, No. 3,212-215, March, 1936.

[2]United States Food and Drug Administration Methods of Testing Antiseptics and Disinfectants. Circular 198. 1931.

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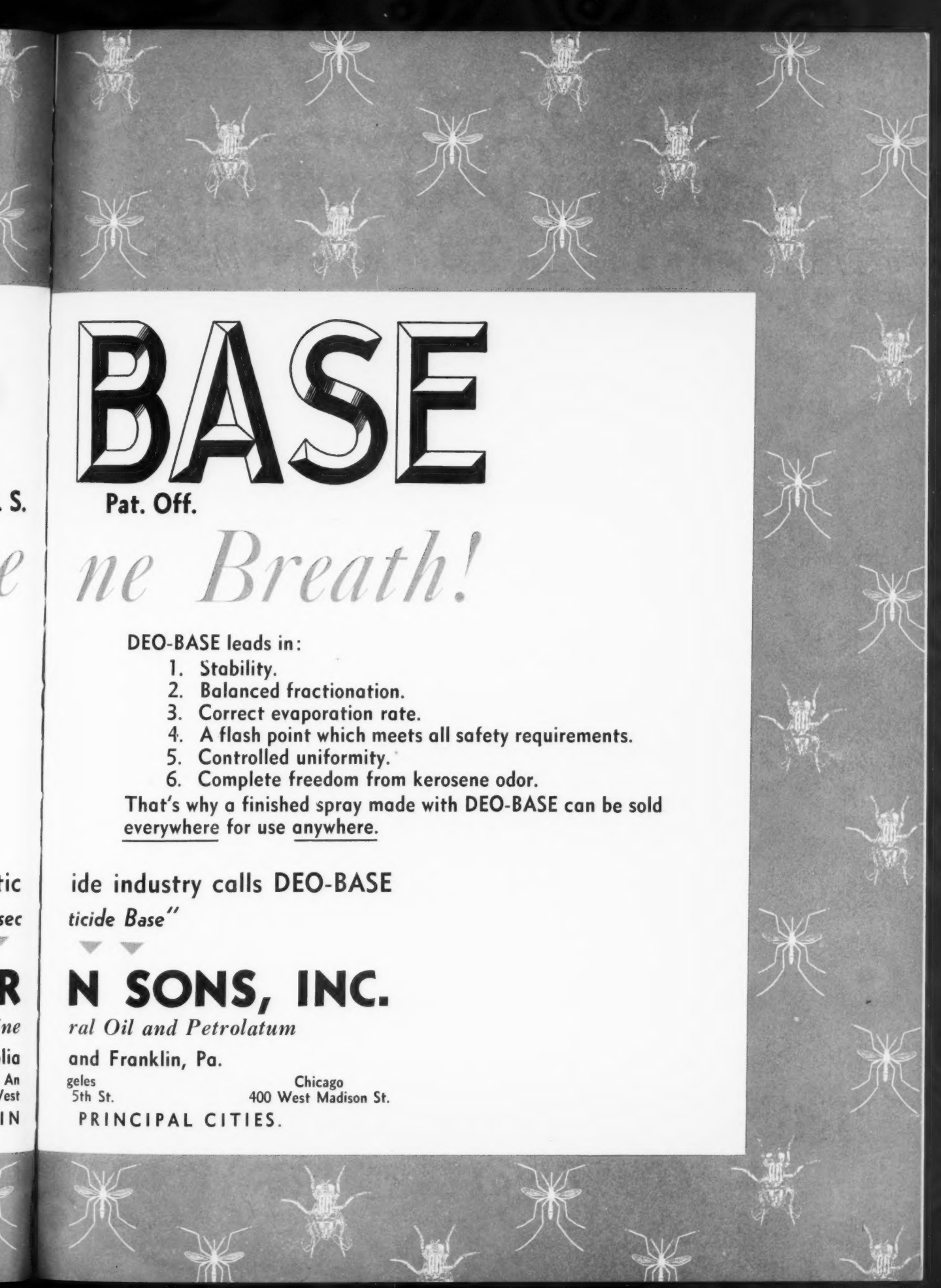

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Derris and Cube

Approximate Chemical Evaluation of Their Toxicity

By Howard A. Jones and C. M. Smith

Associate Chemist and Senior Chemist, Division Insecticide Investigations, Bur. Entomology and P. Q., U. S. Dept. Agriculture.

MUCH work is now being done on the problem of chemically evaluating the toxicity of rotenone-bearing plants. In a recent article Jones, Campbell, and Sullivan[2] have shown that the value for rotenone plus deguelin obtained by the Gross and Smith color test gave a satisfactory measure of the toxicity to house flies in a number of samples of derris and cube roots, but in several of the samples tested this value did not account for all the toxicity. A somewhat closer approach to the toxicity was obtained when the "alkali-soluble" material in the extract was subtracted from the theoretical "rotenone" based on the methoxyl content. More recently Tattersfield[4] has shown that in a number of samples of derris root the determination of materials capable of forming dehydro compounds (rotenone and deguelin) gave the best correlation with the toxicity to *Aphis rumicis*. Such work may eventually lead to a chemical method of accurately evaluating the toxicity of these rotenone-bearing plants.

It would be of value, however, to have some means of evaluating samples approximately by more simple chemical methods than those that apparently will be involved in the evaluation of the exact toxicity. Most investigators working with rotenone-bearing plants are now determining both the rotenone and the total-extractive contents of these materials. With a view to ascertaining whether it were possible to calculate the approximate insecticidal value from results of these determinations, a review was made of the data contained in the article already cited[2]. The pertinent information from this work is repeated in Table I.

Several means of calculating the toxicity from the rotenone and total-extractive contents separately were tried. For example, either the rotenone or the total-extractive value might be multiplied by a proportionality factor to obtain a value for toxicity. Such a factor could be calculated by taking an average of the ratios of rotenone based on toxicity to either the rotenone or the total-extractive value. When such an average factor was applied to the rotenone content, it overestimated the toxicity of samples of high rotenone content and underestimated those of low content, in addition to giving no value for the sample with no rotenone. On the other hand, when the toxicity was calculated from the product of an average factor and the total-extractive content, the toxicity of some samples containing a high proportion of rotenone to total extractives was undervalued. Tattersfield[4] has already mentioned these two situations with reference to toxicity of derris samples to *Aphis rumicis*. The possibility of subtracting an average figure from the total-extractive content or adding a constant to the rotenone content was also tested. In the first case very divergent values were obtained, but in the second the figures agreed in general with the toxicity values.

Neither of these schemes seems a logical means of approach, however, since they do not consider the rotenone and total-extractive values together, and it is known that both the rotenone and the other extractives contribute to the toxicity. Thus it is generally recognized that some idea of the insecticidal value of a root may be gained by a consideration of both these determinations. Hoyer and Leonard[1] have recently proposed the ratio of total extractives to rotenone content as an "index of relative toxicity." An examination of the samples in Table I shows such a value to be incorrect as regards toxicity to the house fly. Thus, among the derris samples No. 523, which was actually less than half as toxic as No. 2217-M-1, would appear by this criterion to be almost four times as toxic, while roots with no rotenone, such as No. 401, would appear to have infinite toxicity. Of the cube samples, No. 674 was one-third as toxic as No. 686-A, but according to the above ratio should be eight times as toxic. It may further be seen that, of two roots having about the same total-extractive content, the one having the higher rotenone content will be given the lower relative toxicity by the Hoyer and Leonard method, whereas from our present knowledge of the relative toxicity of rotenone and the remainder of the extract it is known that the root of higher rotenone content would be more toxic. Furthermore, there seems to be no logical basis for using any ratio between these two values. Stoddard[3] has recently criticized the Hoyer and Leonard index.

A better means of approach would be to assign a toxic value to extractives other than rotenone, which when added to the rotenone content would approximate the total effectiveness of the root. The method used in calculating the toxic value of the remainder of the extract in terms of the toxicity of rotenone is best illustrated by an example. In the case of sample No. 523, *Derris elliptica* root, the total toxicity in terms of rotenone was 6 per cent, but the actual rotenone content was only 1.1 per cent. The total carbon tetrachloride extractive material was 11.8 per cent, or 10.7 per cent of material other than rotenone. Empirically the total toxicity could then be accounted for if this additional material was 4.9/10.7,

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or 0.46, times as toxic as rotenone, or if there was 0.46 x 10.7, or 4.9, per cent additional material as toxic as rotenone. In other words, the toxic value of this root to house flies could be estimated by adding to the rotenone content a value of 0.46 times the other carbon tetrachloride extractives. Similar values for assessing the toxicity of the extractives other than rotenone calculated for the remaining samples, and for total benzene and acetone extractives as well as carbon tetrachloride extractives, are given in Table I. Because the rotenone based on toxicity was only quoted to 0.5 per cent, the values for assessing the toxicity of extractives other than rotenone are good only to 0.05 and are so given.

In the case of the derris samples the average toxic value of the carbon tetrachloride and benzene extractives other than rotenone was found to be 0.5 per cent that of rotenone, while the acetone extractives other than rotenone were 0.4 per cent as toxic as rotenone. This merely reflects the fact that the total amount of carbon tetrachloride and benzene extractives of derris is about the same while acetone extracts appreciably more material. For the cube samples with all three solvents the extractives other than rotenone have a toxicity 0.4 per cent that of rotenone. Thus, the carbon tetrachloride and benzene extractives other than rotenone in the cube samples have a slightly lower toxic value than in the derris samples.

The factor for the toxic value of the extractives other than rotenone in the one sample of *Cracca virginiana* root studied was 0.2. This is much lower than that for derris or cube, reflecting the lower toxicity of the other extractives in this particular sample of *Cracca*. However, since only one sample of this material was used, it is not proposed to suggest this factor for calculating the toxic value of this material.

Using the average factors obtained for the toxic value of extractives other than rotenone to calculate the toxicity of the samples, the values given in Table I are obtained. When these are plotted against the rotenone based on toxicity, as was done with the results of various chemical determinations in the article cited[2], the graphs shown in Figures I and II are obtained for the carbon tetrachloride and acetone extractives. These show a very good agreement with the values for toxicity to house flies. The agreement is almost as good as when the values for rotenone based on "rotenone equivalent to methoxyl" minus "alkali-soluble" material were compared with toxicity. It will be noted that this assigns correct toxic values to such unusual samples as the derris root containing no rotenone (No. 401), the sample of *D. malaccensis* (No. 524) with low rotenone and high total extract, and the sample of high-rotenone cube root (No. 686-A), as well as placing average samples in their proper relationship.

The factors used may change somewhat as improvements are made in the methods of determining rotenone and total extractives and as further insecticidal work is done, but it is believed that such a calculation based on an approximately constant toxic value for the extractives other than rotenone is possible and that the factors to be used will not change greatly.

The values given are derived from work on the toxicity to house flies, and it cannot be stated a priori that they would hold for toxicity to any other insect. This would be true only if the ratio of the toxicity of rotenone to the toxicity of the other extractives were the same for the other species as for the house fly. It would be of interest for workers in this field to ascertain whether at least a similar means of calculation could be applied to results against other insects.

Summary

A means of calculating from the rotenone and total-extractive contents the approximate toxic value to house flies of samples of derris and cube roots is derived from

TABLE I — Calculation of Toxic Value from Rotenone and Total-Extractive Contents

Sample No.	Material	Rotenone based on toxicity to house flies	Rotenone by carbon tetrachloride extraction	Total carbon tetrachloride extract	Total benzene extract	Total acetone extract	Ratio of additional toxicity to additional extractives: Carbon tetrachloride	Benzene	Acetone	New toxic value based on rotenone and—: Total carbon tetrachloride extract	Total acetone extract
		Per Cent	*Per Cent*	*Per Cent*	*Per Cent*	*Per Cent*				*Per Cent*	*Per Cent*
401	Derris root	5.5	None	10.4	9.4	12.2	0.55	0.60	0.45	5.2	4.9
523	(*D. elliptica*)	6	1.1	11.8	10.4	12.0	0.45	0.55	0.45	6.4	5.5
524	(*D. malaccensis*)	11.5	2.0	21.4	20.0	22.4	0.50	0.55	0.45	11.7	10.2
594-B	(*D. malaccensis*)	11.5	5.0	18.2	17.7	21.2	0.50	0.50	0.40	11.6	11.5
2217-M-1	(*D. malaccensis*)	15	7.8	22.0	21.2	24.8	0.50	0.55	0.40	14.9	14.6
2217-P-1	(*D. malaccensis*)	9.5	3.6	20.5	18.5	22.4	0.35	0.40	0.30	12.0	11.1
Average ratios for derris samples							0.50	0.50	0.40		
584	Cube root	10.5	4.1	18.7	17.3	18.2	0.45	0.50	0.45	9.9	9.7
674	Cube root	6	0.8	13.8	13.0	14.1	0.40	0.45	0.40	6.0	6.1
686-A	Cube root	18	12.1	24.9	24.8	25.4	0.45	0.45	0.45	17.2	17.4
2218-H-1	Cube root	11	5.6	21.0	20.3	21.7	0.35	0.35	0.35	11.8	12.0
2218-M-1	Cube root	8.5	3.8	21.5	20.9	23.0	0.25	0.25	0.25	10.9	11.5
Average ratios for cube samples							0.40	0.40	0.40		
1927	*Cracca virginiana* root	1	0.27	4.6	4.1	5.1	0.20	0.20	0.20		

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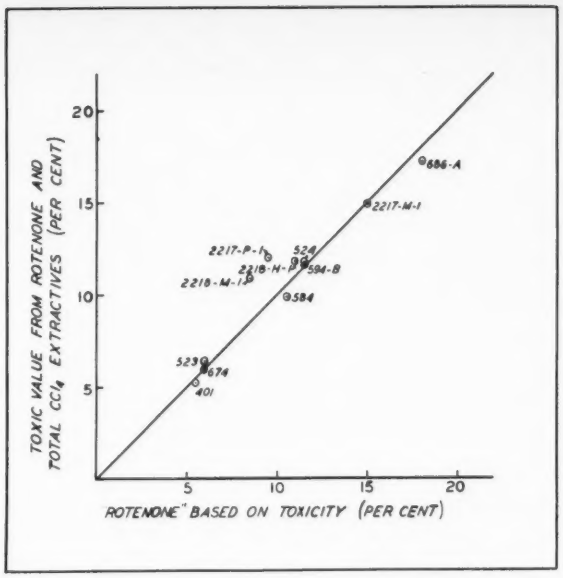

Fig. I. Toxic value from rotenone and total carbon tetrachloride extractives compared with "rotenone" based on toxicity to house flies.

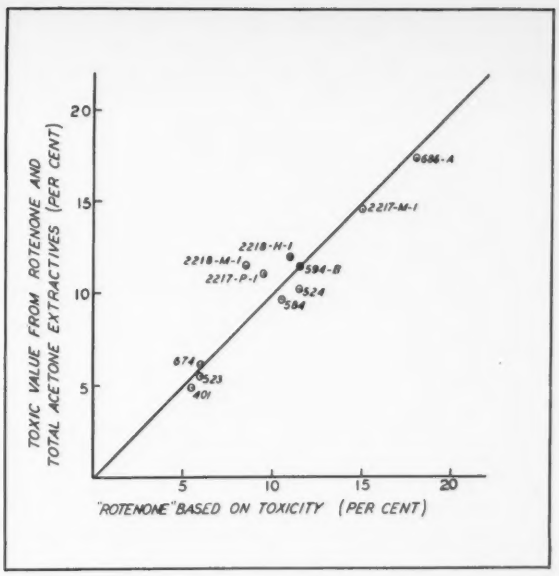

Fig. II. Toxic value from rotenone and total acetone extractives compared with "rotenone" based on toxicity to house flies.

previously published data. It gives a figure that expresses the insecticidal value of the root in terms of the toxicity of rotenone, by adding to the rotenone content a value for the effectiveness of the remainder of the extract.

For derris root, using total-extractive values obtained with carbon tetrachloride or benzene, the expression is: Toxic value equals rotenone content plus 0.5 (total-extractive content minus rotenone content). If the acetone-extract content is used, the factor 0.5 should be replaced by 0.4.

For cube root the expression is: Toxic value equals rotenone content plus 0.4 (total-extractive content minus rotenone content), and this holds for extracts obtained with any of the three solvents mentioned.

The possibility that this or a similar method of calculation may apply to the approximate toxic value of these materials to other insects should be tested.

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[1] Hoyer, D. G., and Leonard, M. D.
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1935. The Problem of the Evaluation of Rotenone-containing Plants. I. *Derris elliptica* and *Derris malaccensis*. Ann. App. Biol. 22: 578-605.

Toxicity of Rotenone Powders

By M. D. Leonard and D. G. Hoyer

John Powell & Co.

THE writers have read with interest R. B. Stoddard's criticism of the article "Toxicity of Rotenone Powders" by Hoyer and Leonard which was published in the March issue of SOAP. This criticism is indeed welcome, but we fear that Mr. Stoddard has misread the article. We call Mr. Stoddard's attention to the fact that we are considering the value of these roots for the manufacture of diluted rotenone-bearing insecticide. When, therefore, they are all reduced to the same rotenone content, any toxicity due to the rotenone would be the same in each case. Differences in toxicity, therefore, are obviously due to variations in the amounts of other extractives in the diluted dusts.

Dividing the rotenone content into the total ethyl ether extractive content automatically reduces all roots to the same rotenone content, namely, 1 per cent. This ratio of the rotenone content to the total ethyl ether extractives, we termed the "Index of Relative Toxicity." By the use of this figure the amount of extractive content per unit of rotenone content can be calculated readily for the diluted insecticide and the practical buyer can purchase the maximum toxicity for his money.

Mr. Stoddard makes the unqualified statement in comparing our two samples, No. 328 and No. 261, "That there may be a difference between the two is not questioned, but it is doubtful if it is anyway considerable and it is by no means certain that the 2 per cent additional rotenone in the second sample (No. 261) does not fully counterbalance the 4 per cent difference in extractive

(*Turn to Page* 123)

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(Part II)

By Charles S. Glickman

THERE are two main methods of manufacture of emulsion waxes which differ basically in that in one method the wax is added to the water and in the other the method is reversed and the water added to the wax. Consistent factory production is relatively simple with good equipment if the materials are carefully weighed, and the temperature and stirring carefully controlled. The size of equipment has been arbitrarily set as for batches of one hundred gallons total. Heating while quite feasible with steam jacketed equipment was found to give the most consistent results when accomplished by electrically heated kettles equipped with thermostatic devices for the control of temperature. The set-up generally consisted of two or more kettles depending upon the method used and the size of the batch desired. In the first method wherein the disperse phase, the wax,—is added to the water, the continuous phase,—the smaller kettle in which the wax and emulsifying agent are heated is to be of about 25 gallon capacity and suitably equipped with a slow paddle-type stirrer.

The equipment should be of iron, Monel metal or stainless steel to prevent reaction between the emulsifying agents and the kettle. The other kettle in which the water is heated should be of about 150 gallon capacity to take care of any excess in volume due to foaming, and fitted with a large paddle-type stirrer of about 100 R.P.M. speed. This large kettle should also be made of non-reactive metal. Both of the kettles should be equipped with suitable gate-valve outlets of two or three inch internal diameter, and shuold be as short as possible, especially in the case of the kettle containing the wax mixture.

The second method is the reverse of the first and in this the water is added to the wax, being sometimes preceded by a primary addition of a concentrated alkaline solution. In this process, the kettle containing the continuous phase, the water, need not be equipped with a stirrer as all stirring is done in the wax kettle. It should be of approximately one hundred gallon capacity and set above the wax kettle. If an alkali solution is to be added before the main addition of the water, there should also be a small kettle for this purpose. The stirrer should be of the slow type (paddle) and placed in the kettle containing the wax and soap mixture. In no event should the kettle containing the water be of the open type and equipped with an open steam jet for heating the water unless there is an accurate gauge attached which will at all times indicate the amount of water present in the kettle.

Because of the very plastic properties that give wax its value as a finishing agent, its resistance to disintegration, its gloss, water-resistance and dispersability, it is generally preferable to carry out the reaction at a temperature above the melting point of the disperse phase. During the first stage of the process while both phases are in the liquid state, these preparations can be regarded as true emulsions, a name frequently applied to them at ardinary temperatures. The dispersed wax, in the second stage of the process must be capable of undergoing a "freezing" or complete solidification of the dispersed particles without a breakdown by the entire system. If these facts are remembered during the subsequent description of the various factory methods, the manufacturer will more readily understand the need for accurate temperature control and careful stirring as well as the other factors essential for consistent production.

The first method wherein the wax is added to the water produces a light colored product depending upon the grade of wax used and the time the wax mixture has been heated prior to emulsification. While as a general rule, the longer the wax is heated with the soap, the finer the degree of dispersion, it likewise follows that the color becomes correspondingly darker. The manufacturer must therefore strike the happy medium which will give the best result. In making a batch, the wax is heated to melting and the calculated amount of fatty acid added with slow stirring. When thoroughly mixed (about 10 minutes) and the temperature up to about 105 degrees C., the alkali is added with slow stirring and the heating and stirring continued for about another 20 minutes. At no time should the temperature be permitted to drop below 105 degrees C. as the mixture will solidify and consequent reheating may result in discoloration. The product at this stage should have a clear brown color.

The water in the large kettle should be heated to boiling and the melted wax added with stirring in small quantities. The violent ebullition that occurs at this point is helpful in the attainment of a fine particle size as the wax really "explodes" on coming in contact with the water. If the formula calls for the presence of any

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additional amount of alkali such as borax or ammonia, it should be added to the water prior to any addition of wax. A distinct translucent milkiness accompanied by the characteristic Tyndall blue fluorescence and no graininess or floating of undispersed wax on the surface of the water should accompany the first small additions of wax.

The water should be kept at the boiling point throughout the addition of the wax and the stirring continued. If for any reason, the wax fails to disperse and the temperature is not below the one required, then this indicates a lack of sufficient emulsifying agent or alkali. This can be remedied by adding to both the water and the wax mixture small amounts of ammonia. The mixture is then stirred till cool and any additions of shellac solution made at that time. The water lost by evaporation may then be added and the final product filtered through several layers of cheesecloth and placed in drums free from any contamination by alcohol, volatile solvents or oils.

The passing of the hot liquid over a system of cooling pipes will tend to reduce the particle size and improve the luster of the finished product. Care must be taken however that the cooling is not too rapid lest the product congeal.

The next (second) is a modification of the preceding procedure and is designed to take care of the substitution of an amount of rosin for the carnauba and the substitution of a commercial grade of soap chips as the emulsifying agent. The wax is heated till melted and the temperature raised to about 110 degrees C. The rosin is added and when thoroughly melted and the solution clear brown in color, the soap chips are added in small quantities with adequate stirring till dissolved. The brown froth that is present at this dissolving is due to the free water that is present in the soap. The mixture should be heated and stirred till clear brown in color and added in the same way to the water. The kettle containing the wax mixture may be freed of all wax that has failed to run out by the addition of small amounts of water taken from the large kettle and stirred to dissolve the residual wax mixture, then added to the main batch.

ANOTHER method of manufacture (third) is the reverse of the first method and in it the wax is heated to melting in the larger kettle and kept at a temperature of about 100-105 degrees C. The requisite amounts of acid and triethanolamine are slowly added and the mixture stirred till clear brown in color. The water containing the calculated amount of alkali is slowly added with suitable agitation and the consequent formation of a clear brown gel. Upon further additions of boiling water, the gel should thicken and then dissolve with the accompanying fluorescence and no graininess or dull milkiness. If the gel does not become clear, it can generally be remedied by the addition of small amounts of ammonia both to the wax solution and the water. Upon the addition of all of the water with the proper stirring, the solution should assume a clear grayish or brownish tint. The batch can then be made up to the proper volume and the requisite amount of shellac, if any, added, and filtered and stored in drums.

The carnauba wax in a fourth method is melted in the large kettle and stirred well with the oleic acid at a temperature of about 100 degrees C. The triethanolamine is then added slowly with stirring. The borax is dissolved in boiling water and slowly added to the wax mixture producing a clear, jelly-like mass. The rest of the boiling water is now added with stirring and then the entire mixture cooled to about 70 degrees C. and the castor oil added with vigorous stirring. The temperature should never exceed 100 degrees C. at any time. Any shellac to be used should be added to the cold solution with stirring and the mixture as a whole stirred till cool before packing into drums.

There is still another variation which can be applied to either of the two main methods (first and third), and that is the formation of rubless wax concentrates which can be easily re-dissolved in the requisite amount of water when needed. This is accomplished by stopping the process after the first small addition of water with its consequent formation of a clear brown mass. This material will solidify if left alone but will retain its properties over a length of time. It can be de-dissolved in water containing a small amount of alkali.

The advantages of the first method over the third method are interesting from a colloidal standpoint and may be the cause of the failure of this method at various times. Aside from the fact that the first method produces lighter colored products with a finer degree of dispersion it is also possible to reduce more safely the amount of soap in the wax mixture than is possible in the second method. Returning to what may be the main fault with the second method, there is a strong possibility that after the formation of the clear brown jelly-like mass caused by the addition of a small amount of boiling water to the wax mixture containing the soap, that a phase reversal or change from an oil-in-water to the water-in-oil system may cause a general breakdown of the emulsion as a whole.

Another variation of the first method which may be of interest to the producer of this type of product is accomplished by the use of a sealed vessel containing the wax mixture, melted and under pressure, and fitted with an atomizing device projecting beneath the surface of the boiling water. This atomization of the melted wax at a temperature above that of the water and its consequent fine dispersion may make possible the use of a very small amount of alkaline material as an emulsifying agent.

The finished product should be carefully tested for luster, stability, water-resistance, tackiness, ease of spreading, odor and color, as well as alkalinity. The finished material should never be tested while still hot as the introduction of this variable will give inaccurate results when compared with a standard.

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The following materials are suitable for test surfaces and all tests should be made carefully, black and white linoleum, hard rubber panels, and hardwood panels. All of these test surfaces should be carefully cleaned free from any oil, wax or soap present. Squares of approximately 2 inches in area should be carefully marked off and numbered. Equal amounts of the material to be tested as well as the standard should be measured by means of an eyedropper or pipette and dropped upon individual squares. These drops should be carefully spread with a small cotton swab as evenly as possible and preferably with a circular motion. They should not be allowed to overlap.

The smears should dry within thirty minutes from time of application and should cover evenly with no whitening or wrinkling. They should not be tacky to the touch when dry, and upon slight buffing with a clean, soft cloth should increase in gloss. Water-resistance tests can be made by dropping a measured amount of pure water (cold) on the dried film. The drop should then be allowed to dry. Any lifting of the film, spotting or whitening indicates a negative resistance.

The drop of wax when applied to the test surface should show no tendency to "draw up" and cover unevenly. If this does happen with the test product, it can generally be remedied by the addition of a small amount of ammonia to the finished product. Tests for color and odor should be made in suitable tubes against a standard.

Stability can be checked by placing the product to be tested and the standard in sealed glass tubes and exposing them to various temperature ranges for periods of time from 12 hours to two weeks depending upon the season. They can be tested at temperatures of 40, 70 and 100 degrees F. No sedimentation or gelling should take place.

A further test can be made microscopically for particle size. A clean glass slide should be treated with a thin film of the product and allowed to dry under the microscope field without a cover slip. A magnification of about 600 X should be used. The film should deposit itself in a series of wave-like markings relatively close to one another in concentric rings.

A general test for the degree of alkalinity can be made with a suitable pH outfit consisting of chemically treated strips of paper. The colorometric solution type is of little value as the nature of the product (fluorescence and milkiness) will interfere with an accurate determination.

The wide application of uses to which this product can be adapted are almost unbelievable. It is possible in the future that we may find products of this nature being used to seal and finish hard rubber and asphaltum articles, etc. It can be suitably colored with water soluble non-acid dyes to produce new and novel effects. Metallic powders can be dispersed in these solutions to give interesting and beautiful effects. Porous tile and brick as well as wood surfaces can be effectively sealed with this type of material. When these suspensions are tinted or colored they can be used as printing or writing inks giving an effect similar to engraving as they dry with a high gloss, are water-resistant on paper and give a raised effect. They are not corrosive as most inks and do not decompose. They may be utilized in textile printing or finishing processes for blocking out designs which may be later treated with water soluble colors without affecting the design made by the emulsion application.

In certain forms they are applicable as automobile finishing materials and if sprayed upon clean lacquer or Duco surfaces, they can be easily buffed off to produce lasting finishes of a high luster and lasting effect such as is done with Simoniz.

TOXICITY OF ROTENONE POWDERS

(*From Page* 117)

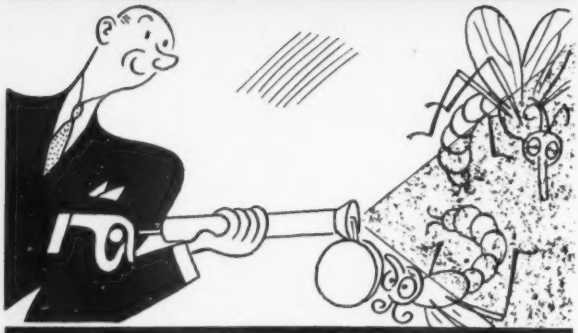
content (of No. 328)." Number 328 has 4.54 per cent rotenone and 20.47 per cent total ether extractives, with an IRT of 4.5. Number 261 has 6.61 per cent rotenone and 16.54 per cent total ether extractives with an IRT of 2.5. Again we call Mr. Stoddard's attention to the point that no comparison was made between the roots as such, but only after they had been reduced to the same rotenone content.

The U. S. Bureau of Entomology has worked out a formula to assign a toxicity figure to derris and cube, based on the use of house flies as an indicator. Since this is as yet unpublished, we do not feel at liberty to give it here. When this formula, however, is applied to the two samples in question, our sample No. 328 to which we assigned an IRT of 4.5 shows a toxicity of 6.4 and our sample No. 261 to which we assigned an IRT of 2.5 shows a toxicity figure of 4.0 Therefore, the IRT gives a superiority of 130 per cent and the U. S. Bureau's formula a superiority of 160 per cent in toxicity of the one sample over the other.

Mr. Stoddard attempted to illustrate the "complete impracticability" of the IRT by applying it to the derris root containing 1 per cent rotenone and 18 per cent total ether extractives which would have an IRT rating of 18 and which he says implies a superiority of 300 per cent over one of our samples and a little better than 600 per cent over the other. By the U. S. Bureau's formula this would have a toxicity figure of 8.5 which is 130 per cent and 210 per cent respectively better than the two samples in question.

As will be noted in our original article the IRT was applied to roots in which the range of rotenone was roughly from 4 to 7 per cent, and the total ether extractives from 13 to 23 per cent. These figures undoubtedly cover the range of variation in most of the rotenone-bearing powder now offered for sale. We do not intend that the IRT shall apply to extreme examples, such as Mr. Stoddard has given, since it is problematical as to whether or not the toxicity is directly proportional to abnormally high ratios of total ether extractives to rotenone.

USE A SPRAYER



-NOT A DRIBBLER

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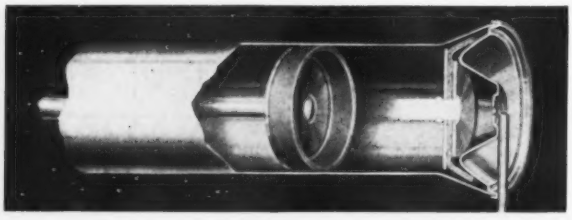
Here's action with a vengeance—full pressure with every stroke breaks spraying solutions into a fine mist. It's the self-flexing plunger leather that spreads around the cone at each stroke. Always lively, always effective, even after long periods of disuse. It gets action, makes happy customers because it means better spraying results.



You'd think this exclusive Lowell feature would make these Nu-Action sprayers more expensive. But it doesn't. Write us regarding quantity prices and merchandising suggestions for your insecticide.

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Insecticide Buying

Purchasing by Public Agencies Condemned by Dr. Robert C. White—Says Low Prices Indicate Many Products Must Be "Phoney"

IN a bluntly worded letter to SOAP, Dr. Robert C. White, insecticide authority, president of the Robert C. White Co., Philadelphia, and former president of the National Association of Insecticide & Disinfectant Manufacturers, condemns the methods employed by governmental agencies in the purchase of insecticides. In commenting on the controversy over the recently issued specification by the Veterans Bureau, Washington, he is caustic in his references to the prices which public agencies pay on bids, and in references to worthless specifications, and the desire to get something for nothing. Dr. White who is the Comptroller of the City of Philadelphia, had the following to say in his letter:

"I am delighted to read the editorial comment under the title of 'Veterans' Insecticide Specifications' in the May issue of SOAP. There is no need for you to regard this communication as confidential, as I have no axe to grind in this matter whatsoever. I do not expect to sell any governmental agencies, any insecticides, for I know of no such agencies that are qualified, either by intelligence, experience or inclination, to know what a good insecticide may be, how to obtain it, or how to prove to their satisfaction, after obtaining it, that it is a high grade, efficient product, worthy of the price paid for it.

"The curse of our industry has often been quoted as being the cheap and crooked dealer, but rarely does anyone have the honesty to stand out and make the assertion that the flood of cheap products sold to such consumers is caused, not primarily by the manufacturer desiring to sell a worthless product, but by the senseless desire of such agencies to buy something for nothing, or nearly so.

"Purchasing departments of this nature will spend hours listening to 'twaddle' from the most ignorant of salesmen, but never have they been notably accused of going to the leaders of the industry, who are known to be above reproach, and solicit their advice. Only a few moments would be necessary for this type of buyer to determine that the price at which he desires to purchase would not cover the cost of the basic ingredients that constitute an article.

"It is true that chiselers in the industry have at various and sundry times introduced the writing of such bewildering specifications that no manufacturer could meet them, and now that we have at last the honest and intelligent buyer beginning to realize that specifications must be written which can be met, we now have the opinionated purchasers who are determined to buy an article at an absurd and impossible price. The result is well known to the industry, for the manufacturers of high grade articles which give real value for the money spent on them have ceased to quote prices in many cases. The ultimate result is obvious. Worthless, and nearly worthless junk has been produced, and the buyer glows with satisfaction at the absurd price paid, accepting no responsibility for the poor users who have to battle with this worthless stuff.

"I have observed that our best manufacturers, who spend thousands annually in research work, and who take a justifiable pride in the quality of their products, are at all times willing to place their knowledge and equipment at the disposal of various governmental and allied purchasing departments, but rarely is advantage taken of this generosity.

"The prevalent sport of damning insecticides should be laid to those artists whose mania is the pursuit of *something for nothing*. It is a comparatively simple matter for these people to ascertain the actual costs of the raw materials and find that the prices they are paying are below the actual cost, and therefore must be 'phoney'. In fact, one would wonder why these people bother buying insecticides, as their apparent desire is to be stung, and this could just as well be done by the insects as by the manufacturer.

"Specifications will always be worthless until they are possible of attainment, and confidence in these products can only be developed when they are honestly purchased from honest manufacturers on specifications which can honestly be met.

"Why write more? This is an uphill battle which must be continued, and the purchaser and the manufacturer must both be educated, regardless of how many years, and how much patience this may take."

The Gross and Smith colorimetric method for the determination of rotenone and deguelin has been improved by substituting sulfuric acid for nitric acid, reducing the concentration of the alcoholic potassium hydroxide by diluting with water, and adding the necessary nitrite as sodium nitrite in the alcoholic potassium hydroxide. The stability, hue and depth of color produced by the rotenone as well as that produced by the reagents can be easily controlled. This combination of reagents practically eliminates fading and increases the sensitivity of the test 20 times. Lyle D. Goodhue, *J. Assoc. Official Agr. Chem.* **19,** 118-20 (1936).

The odor,—or even a suggestion, of kerosene in household insecticides is repugnant and materially curtails their use. For greater consumer acceptance and more general use, we suggest

NONODR

The completely deodorized base for liquid insecticides.

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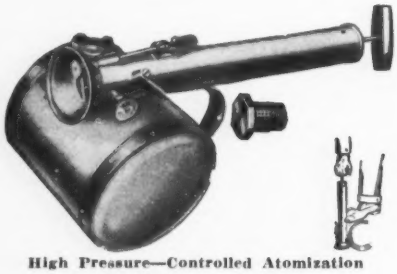

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No. 35—3 qt. capacity.
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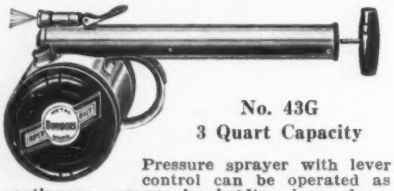
The discharge has a wide range of adjustments, from a forceful, penetrating spray, to fine floating fog, with in-between variations.



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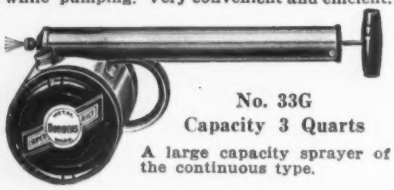
Pressure sprayer with lever control can be operated as continuous sprayer by holding lever down while pumping. Very convenient and efficient.



No. 33G
Capacity 3 Quarts
A large capacity sprayer of the continuous type.

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No. 10
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and
Volume Control
1½ Gal. Capacity

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NORTH ST. PAUL, MINN.

Insecticide-Disinfectant Meeting

(*From Page* 104)

twenty-four hours there shall be not more than a trace of oil float or black sediment.

Color:—Clear dark brown to reddish brown liquid.

Specific Gravity:—1.025 to 1.045 at 15.5°C.

Pine Oil Disinfectant

Coefficients 3 to 3½

Composition

	maximum	*minimum*
High-grade steam distilled Pine Oil	63.5%	62.5%
Rosin Soap	26.0%	25.0%
Moisture	9.0%	8.0%

The Pine Oil used in this formula shall conform to the following specifications:—

	maximum	*minimum*
Specific Gravity @ 15.5—15.5°C		0.937
Refractive Index		1.480
Unpolymerized Residue	2.5%	
Moisture	0.5%	
Color 500 Amber	8.0	
200 Red	0.25	
Acidity as Acetic Acid	0.1%	
Odor	Characteristic	

Appearance: Clean; that is free from suspended matter and clear Boiling Range:

5%	203°C	
95%	225°C	
Caustic Test	Negative	
Flash Point		70C

Phenolic Compounds

A one per cent solution of pentacresol in 2 per cent soap solution at 20° C. gave high germicidal action toward Gram-positive bacteria such as the hemolytic streptococcus, but was low in efficacy against Gram-negative bacteria such as *E. coli*. A 1 per cent solution of the product in 50 per cent alcohol and 10 per cent acetone served as a much more effective stock solution. In the presence of 20 per cent horse serum, 1 per cent pentacresol was more effective as a germicide against Staph. aureus than six mercurials and a phenol derivative with which it was compared.

Mercarbolide tincture, in contrast to pentacresol, was most effective in germicidal action towards Gram-negative bacteria, the phenol coefficient with E. typhosa being over 1100 on the basis of the dry chemical. Different solutions of Mercarbolides showed marked bacteriostatic action toward Staph. aureus. Aqueous Mercarbolide solution showed higher germicidal action than the tincture toward *E. typhosa* and *E. coli*, but was not as effective as a bactericide against Staph. aureus.

Mercresin was fairly uniform in its germicidal activity towards all of the Gram-positive and Gram-negative pathogens and non-pathogens examined at 20°, 30° and 37° C. Short-time exposure tests showed Mercresin to be extremely rapid (almost instantaneous) in germicidal action against *Staph. aureus*. Mercresin showed no sign of deterioration over long periods of time. Cecil G. Dunn. *Ind. Eng. Chem.* **28**, 609-12 (1936).

National Association of Insecticide *and* Disinfectant Manufacturers

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Dr. Robert C. White
Robert C. White Co., Philadelphia
H. W. Hamilton.....**White Tar Co., Kearny, N. J.**
S. S. Selig.....**The Selig Co., Atlanta**
W. J. Zick.....**Stanco, Incorporated, New York**
H. A. Nelson.....**Chemical Supply Co., Cleveland**
Wallace Thomas.....**Gulf Refining Co., Pittsburgh**
H. W. Cole...**Baird & McGuire, Inc., Holbrook, Mass.**
R. H. Young.....**Davies-Young Soap Co., Dayton, O.**

MEMBERSHIP

Active — Open to manufacturers and wholesale distributors of disinfectants, germicides, deodorants, insecticides, liquid soaps, polishes, and allied products. Dues —$75.00 per year.

Associate — Open to firms supplying raw materials, containers, equipment, etc., to the membership. Dues—$50.00 per year.

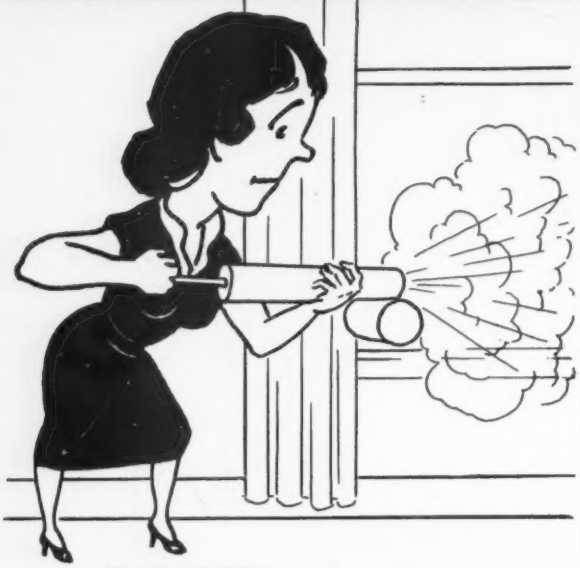
For further details, communicate with

NATIONAL ASSOCIATION OF INSECTICIDE & DISINFECTANT MANUFACTURERS

John H. Wright, Secretary

122 E. 42nd STREET NEW YORK

HUDSON



BUT REALLY, MRS. MURPHY- *That's the WRONG Way!*

The proper way to spray a household insecticide is UP—NOT DOWN! That's what we're telling users of Hudson Sprayers. When you spray up, you are also spraying down, because a fine spray that starts at the top of the room becomes a blanket of mist that drops gradually, killing insects as it goes. It's the most effective way to spray because it goes everywhere. It's the most economical way to spray because there's less waste of material.

All that, of course, depends on getting the right start—by using a sprayer that delivers a finely atomized mist and throws it to the ceiling.

That's the Hudson Fog Sprayer—the perfect model for household use. It's leakproof; and you can spray upright with it until empty. Look at these features:

HUDSON FOG SPRAYER

HUDSON
FOG
Drip Cup
Vent to return any overflow to can.
Unusually large filler opening to permit filling direct from can or bottle.
Curved Syphon Tube to permit spraying into upper corners of room.

Be sure your customers are getting the most out of your product. Our merchandising department can render valuable assistance. Why not write us today? There's no obligation.

H. D. HUDSON MFG. CO.

589 E. ILLINOIS ST. CHICAGO, ILL.

THE BEST SOURCE OF SUPPLY

KOPPERS

DEPENDABLE · UNIFORM

plus

CONSULTATION SERVICE FOR YOUR CHEMISTS

MANY of the processes employed in the refining of coal tar products have been developed by the Koppers companies. A competent technical staff is constantly at work to introduce further process refinements and to insure the high quality of all Koppers products. The Koppers laboratories are abreast of all new developments in the field of coal tar products. Their services are at your command.

TAR ACIDS

CRESOL, U. S. P.

PHENOLS

CRESYLIC ACID

98% to 100% STRAW COLOR

TAR ACID OILS

NEUTRAL HYDROCARBON OIL

(For construction aud maintenance, Koppers also produces: Roofing, Waterproofing, Dampproofing, Creosote, Tar Base Paints and Coatings, and Tarmac for driveways, roads, pavements, etc.)

KOPPERS PRODUCTS COMPANY

KOPPERS BUILDING, PITTSBURGH, PA.

Offices: New York, Boston, Providence, Chicago, Birmingham

Plants:

Birmingham, Ala.; Buffalo, N. Y.; Chicago, Ill.; Follansbee, W. Va.; Fort Wayne, Ind.; Hamilton, O.; Kearny, N. J.; Milwaukee, Wis.; New Haven, Conn.; Providence, R. I.; St. Paul Minn.; St. Louis, Mo.; Swedeland, Pa.; Utica, N. Y.; Youngstown, O.

NEWS.....

McCormick Opens Warehouse

A branch office has just been opened in Memphis by McCormick & Co., Baltimore, which will be in charge of R. T. Pilling, Jr. Control of warehouse stocks, invoicing, servicing, etc., will now be handled through this office, rather than direct through Baltimore headquarters. It is the opinion of C. P. McCormick, head of the Baltimore concern, that the opening of this new branch will provide a more efficient service for McCormick customers in the south and southwest.

Sales Drive on "Lysol"

The heaviest advertising drive ever run on "Lysol," product of Lehn & Fink Products Corp., Bloomfield, N. J., has just been started. The basic theme of the campaign will be built around the second birthday of the famous Dionne quintuplets. "Lysol" is said to be the only disinfectant that has been used in protecting these famous children against infection. A feature of the campaign will be distribution of an illustrated booklet to users of "Lysol" describing the scientific care given the Dionne babies.

Markets Electric Fly Killer

An electric device to kill flies is being offered by C. E. Canning, Inc., Chicago, under the name of the "Entostat". When a fly settles on one of the grids it causes an arc in the circuit which passes through the fly and causes instant death.

Reviews Insecticidal Materials

R. C. Roark of the Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, has just published a new 132-page book under the title "Lonchocarpus Species (Barbasco, Cube, Haiari, Nekoe and Timbo) Used as Insecticides". It is the purpose of the author in this latest compilation to bring together all the data relating to this family of tropical shrubs and trees that are known to have insecticidal action. Separate sections of the book take up such points as "Chemical Evaluation of Cube", "Use of Cube as an Insecticide", "Laws Relating to Cube" and "Classified List of Insects Against Which Cube Has Been Tested". A very elaborate bibliography of some 40 pages has also been included, listing practically all of the published material on this subject.

"Bug-A-Boo" Ad Plans

Socony Vacuum Oil Co., New York, has scheduled an intensive advertising campaign on its "Bug-A-Boo" insecticide, with advertising copy featuring limericks and sketches by James Thurber. National magazines on the schedule include *Liberty*, *Colliers* and the *Saturday Evening Post*.

Quassia for Insecticides

A report from Coconut Products Ltd., Kingston, Jamaica, B. W. I., indicates that quassia chips, a product of the island, are finding increasing use in certain countries as an insecticidal raw material. During 1934, it is stated, Italy and other countries in Europe imported from Jamaica 2,000 tons of quassia, the major portion of which found use in the spraying of vineyards. It is stated that up until now there has been but a very small quantity of the material imported into the United States.

New Pepsodent Sales Plan

Pepsodent Co., Chicago, has just announced a new sales policy under which products of the company will be available only through a selected list of factor wholesalers appointed by the company. The company hopes in the future to exercise a more direct control over the movement of its products into consumers' hands. Retailers are guaranteed a profit of 38 per cent on list prices, with 22 per cent guaranteed even when they sell at the minimums. The company has just reduced the price of the 50c tube of "Pepsodent" toothpaste to 40c and has introduced a new 25c size.

Hollingshead Entertains

Members of the Philadelphia Superintendents' Association were guests of the R. M. Hollingshead Corp. at their plant in Camden, N. J., last month, inspecting the various departments of the plant and seeing several demonstrations of the Hollingshead line of sanitary products. The visitors made the trip from Philadelphia by bus and after their trip of inspection through the plant were guests for dinner at the Hotel Walt Whitman. C. W. Schwank, general sales manager of the company, gave a short talk to the group after dinner.

Exterminators Elect Rader

George A. Rader, Berkeley, Cal., president of the Northern California Structural Pest Control Association, has been elected a director of the National Association of Exterminators & Fumigators, succeeding the late Frank W. Harper.

Johnson Gift Offer

S. C. Johnson & Son, Inc., Racine, Wis., are advertising a special offer of a full-size bottle of "Johnson's" furniture polish and a jar of "Shi-Nup" household cleaner to be given free with each purchase of a pint of Johnson's liquid wax, a pound of paste wax or a pint of "Glo-Coat" floor polish. The company is currently celebrating its fiftieth anniversary around which has been built the largest advertising campaign in the company's history.

Lawson Elected

John H. Lawson, Federal Varnish Co., Chicago, executive, has been elected a member of the executive committee of the Chicago Paint and Varnish Club.

DERRIS, INC.

79 WALL STREET
NEW YORK CITY

SPECIALISTS IN STANDARIZED DERRIS POWDER, CUBE POWDER, AND ALL ROOT DERIVATIVES USED IN HOUSEHOLD, HORTICULTURAL, AND AGRICULTURAL INSECTICIDES

Other Washburn Floor Products:

PENETRATING SEAL BASE
TREAD PROOF SEALER
LIGHT MOPPING VARNISH
HEAVY MOPPING VARNISH
ALL AMERICAN GYM FINISH
BURNLESS GYM FINISH
MAGIC LUSTRE WATER WAX

All of these Washburn products are described in our new 52 page publication "Modern Floor Maintenance." Gives complete instructions for the care of all types of floors. Write for a copy.

JOBBERS

are increasing PROFITS and satisfying CUSTOMERS with

Washburn's Terrazzo Seals

CRYSTAL SEAL—For newly laid terrazzo floors. Seals the floor while building is being completed and insures proper curing while drying.

Non-Slip Terrazzo Seal—For old terrazzo floors. Produces an alkali proof and water proof finish. Also ink and acid resisting. Dries with a lustrous, non-slippery finish.

Join the swing to Washburn floor maintenance products. Let us figure with you on your requirements.

T. F. WASHBURN CO.

Floor Maintenance Division

2244 ELSTON AVE. CHICAGO

Fuld Bros. Triple Capacity

Fuld Brothers, Inc., Baltimore, are currently assembling all of their manufacturing departments and offices in their new building which provides triple the manufacturing space of their old quarters. The new Fuld building located at 704 South Wolfe Street, was occupied about May 15th. As alterations and new installations proceed in the new location, manufacturing schedules are being maintained at the old building on Frederick Avenue. The removal was necessitated earlier than had been anticipated due to the unprecedented expansion during the past year.

Attack "Ku-Rill" Claims

A. C. Hynd Corp., Buffalo, is charged in a U. S. Federal Trade Commission complaint with unfair competition in misrepresenting the therapeutic value of "Ku-Rill," a germicide. According to the complaint, "Ku-Rill" is not, as allegedly advertised by the respondent, a competent remedy for athlete's foot, pimples, and other skin diseases, does not kill 27 different kinds of disease germs or destroy the parasite that causes skin ailments, and does not banish every trace of red, cracked skin and make it clear and smooth again. Claims that the product excels other germicides are also untrue the complaint alleges.

Broom Company Names Officers

The Kansas City Association for the Blind, conducting a broom factory at 1837 Madison street, Kansas City, has just elected the following officers for the coming year: President, R. C. Hopkins; first vice-president, Albert Tamm; second vice-president, George Fleishman; treasurer, Miss Eleanor Miller, and secretary, Miss Evelyn Jahn.

Thyme Disinfectants

Oil of thyme as an industrial disinfectant depends first on its thymol and second on its carvacrol contents. The presence of borneol, linalol, thymene and cymene is of little value. When applied to a surface, the oil retains its bactericidal action for three months. If it is used in admixture with turpentine and rosin oil the effect is prolonged for years. *J. Soc. Dyers Colourists* **52**, 142 (1936).

Louisville Chemical Expands

Louisville Chemical Co., 108-14 S. Third St., Louisville, has doubled its sales force and floor space. The company, which manufactures sweeping compounds, insecticides and disinfectants, has been in business for 39 years. The building has been remodeled and an electric sign erected in front.

Termite Damage Heavy

The Dayton branch of The Terminix Co., 494 Ludlow Arcade, reports a heavy business, which they feel is attributable in part to stimulation of remodeling by Federal Housing Act loans. Dayton is suffering increasingly from termite infestation, they report, a great many homes in the Dayton territory being in various stages of destruction by them.

Derris Emulsion

The following formula for an insecticide is recommended for its simplicity and efficiency: Macerate 15 grams of derris powder with 100 grams of terpinolene for 5 days, shaking twice daily, at not over 30° C. Filter and keep in colored glass bottles. When ready for use mix 20 parts of French pine oil and 20 parts of sulfonated oleic alcohol, add 60 parts of the terpinolene extract of derris and make into a 0.5 per cent aqueous emulsion. J. Feytaud and P. de Lapparent. *Bull. inst. pin* 1935, 241-2.

Sulfonated Coal-Tars

The hydrogenation products obtained from coal or coal tars or their dehydrogenation products are treated with sulfonating agents to produce wetting and emulsifying agents. I. G. Farbenind. A-G. French Patent No. 789,993.

Pete Clark in Ashland

Pete Clark is the newest arrival at Ashland, Ohio, according to a report from that city, having been born on May 4 at the Samaritan Hospital, Ashland. He stated that his parents are Mr. and Mrs. H. Marshall Clark, and that his father works for Dr. Hess & Clark, Inc., of Ashland,—when he works. He also confided that he is going into the disinfectant and cow udder ointment business when he grows up. His grandfather, J. L. Clark, president of Dr. Hess & Clark, to whom Pete referred the interviewer for further information, stated that Pete's already quite apparent high character qualified him to be a typical disinfectant manufacturer at an early age. When informed that his father is second vice-president of the National Association of Insecticide & Distinfectant Manufacturers, Pete just grinned. He also mentioned that he had an older brother, James, age four.

Soaps Not Bacteriocidal

Common soaps and most medicinal soaps have no microbicidal power. Afrodol soap showed some activity. A 5 per cent formaldehyde soap destroyed *Es. coli* within 5 minutes but not always microbes of higher resistance. E. Stepancovsky and M. E. Rogriguez. *Rev. farm.* (Buenos Aires) **77**, 460-5.

Plan Termite Advertising

Terminix Co., Cincinnati, termite-insulation specialists, affiliated with E. L. Bruce Co., Memphis, has retained The Merrill Advertising Co. as advertising and sales promotion counsel.

Exterminator Moves to Towson

Exterminator Manufacturing Corp., has moved from Baltimore to Towson, Md. W. H. Keukner is head of the company, which manufactures a rat exterminating product.

Day, Lehn & Fink Director

Joseph P. Day has been elected a director of the Lehn & Fink Products Co., New York.

HOOKER PARADI

HOOKER HE CO ELECTROCHEMICAL

The uniformity of these clean, white crystals makes your product free-flowing, non-caking.

HOOKER ELECTROCHEMICAL COMPANY

Eastern Sales Offices: Lincoln Bldg., New York City; Works: Niagara Falls, N. Y.

Western Sales Offices: Tacoma, Wash.; Works: Tacoma, Wash.

6071

Are you looking for a good odor at a minimum cost for your sprays, deodorants, hand soaps, polishes, deodorizing blocks, etc.? The following will solve your problem. They are powerful, pleasant and lasting.

SOMODOR	1 TO 5 LBS. 60c. 6 TO 25 LBS. 55c. 26 TO 100 LBS.. 50c.
VALUDOR	1 TO 5 LBS. 70c. 6 TO 25 LBS. 65c. 26 TO 100 LBS. 60c.
SOLODOR	1 TO 5 LBS. 75c. 6 TO 25 LBS. 70c. 26 TO 100 LBS.65c.
NARCISSE 150	1 TO 5 LBS. $1.50. 6 TO 25 LBS. $1.40. 26 TO 100 LBS. $1.30.
LILAC R. P. C.	1 TO 5 LBS. $1.50. 6 TO 25 LBS. $1.40. 26 TO 100 LBS. $1.30.

Write for Samples

RIVIERA PRODUCTS CO.
215 W. OHIO ST. CHICAGO
Headquarters in the Middle West for Perfume Oils, Waxes, Colors, etc.

WHAT IS THE BEST METAL POLISH . . .
for Use on a Rough Surface?

You will find the answer to this question on page 140 of the 1936 SOAP BLUE BOOK. The BLUE BOOK gives you a complete buying service on sanitary specialties,—tells you not only where to buy, but also what you should look for and what to avoid in purchasing bulk sanitary specialties. Recognized experts tell you what their years of manufacturing experience have taught them about the quality of soap powders, liquid soaps, deodorizing blocks, disinfectants, polishes, etc. A few BLUE BOOKS are still available for new subscribers to SOAP.

Use Your BLUE BOOK!

Sherwin-Williams Officer Dies

Clarence G. Bull, a director and vice-president of the Sherwin-Williams Co., died May 8 in his home in Cleveland Heights, Ohio, after a long illness caused by a heart ailment. He was 54 years old.

C. S. A. Golf Schedule

B. J. Gogarty, Commercial Solvents Corp., New York, chairman of the committee in charge of this year's golf tournaments of the Chemical Salesmen's Association, has announced the following summer schedule:

June 16, at Baltusrol Golf Club, Short Hills, N. J.

July 14, at North Hills Golf Club, Douglaston, L. I.

August 11, at Gedney Farm Golf Club, White Plains, N. Y.

September 15, at Pomonok Country Club, Flushing, L. I.

As in previous years there will be several groups of prizes offered in various classes of competition at the four individual tournaments, with a set of special prizes offered for those who compete in three out of the four tournaments.

Zonite Combination Offer

Zonite Products Co. is currently featuring a special combination offer in collaboration with the makers of "New-Skin." A trial size bottle of "Zonite" is given with each regular size package of "New-Skin."

Pine Disinfectants

Cheap pine disinfectants can be made by the formulas given below. These concentrates are diluted with the desired amount of water.

		Oz.
1.	Turpentine	100
	Rosin spirit	20
	Nut oil	10
	Liquid ammonia (880)	8
2.	Cheap pine oil	182
	Oleic acid	2
	Triethanolamine	6
	Water	200

The triethanolamine, oleic acid and one-third of the pine oil are stirred together until clear, then 40 parts of water are added with vigorous stirring until a homogeneous emulsion is formed. The remaining two-thirds of pine oil is then added and the rest of the water with constant agitation, until emulsification is complete. *Soap, Perfumery and Cosmetics*, March 1936.

Sherman with Pepsodent Co.

Stuart Sherman, vice-president of Lord & Thomas, Chicago, has been appointed vice-president in charge of advertising and sales promotion of the Pepsodent Co., of that city. He was formerly divisional sales manager for Colgate-Palmolive-Peet Co., before joining the agency in 1933.

Polish Mfr. Names Agent

McAleer Manufacturing Co., Detroit, maker of automobile polishes, has appointed Holden, Graham & Clark, Inc., of that city, to direct its advertising account.

Pfaltz & Bauer Move

Pfaltz & Bauer, Inc., New York chemical dealers, moved their main office recently from 300 Pearl St., to the Empire State building. The Pearl St. building will be kept for warehouse use as will be the building at 12 Peck Slip.

Cosmos Names Sales Aid

Cosmos Chemical Co., Boston, makers of "Sanovan," a general purpose deodorant, has appointed Federated Sales Service, Inc., of Boston, as marketing counsel in reaching the institutional field.

Lower Insurance Rates

A bulletin has recently been mailed by the National Association of Exterminators & Fumigators calling attention to the fact that new and lower rates on insurance for members of the industry have been announced by the National Bureau of Casualty and Surety Underwriters to go into effect June 1. The new rates for exterminators will be only 30c per $100 of net receipts as compared with the old rate of 50c for a $5,000/$10,000 policy. On the higher coverage policies the proportionate reduction is even higher. The minimum premium of $50 is unchanged, but with the new rates a firm will be able to do $16,666 of gross business before the minimum premium is absorbed as compared with $10,000 previously. Rates for fumigation remain the same, with the minimum premium for those engaged in both the exterminating and fumigating business still being $250. In its announcement the national association called attention once more to the fact that it is not in the insurance business and is not interested in any particular insurance company. It was also pointed out that the association cannot guarantee that any applicant for insurance will necessarily be accepted by the insurance company. The association can merely suggest where firms may apply for insurance.

Dayton Exterminator Moves

Sam Davis, owner of Davis Household Pest Exterminating Co., Dayton, Ohio, has moved his offices from Beavertown to Kingston Ave.

Ask Exterminating Wage Rise

A minimum wage of $35.00 per week and a wage increase of $5.00 per week for all employees now receiving $35.00 per week or more are two of the demands made by Exterminators & Fumigators Local 155 in negotiating a renewal labor agreement for the coming year with the Professional Exterminators Association, New York. A week's vacation with pay as well as other demands which the labor relations committee of the association describes as excessive have also been made. It is understood that the association is willing to renew the existing contract, but will fight against any such demands as have been made.

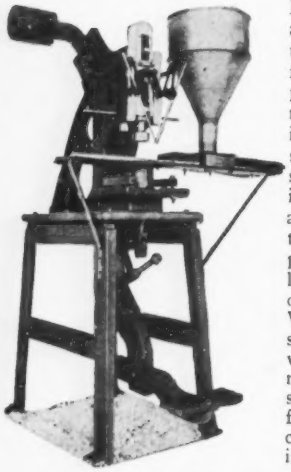
Shoe Cleaner Advertising

Sno-Flakes Products Co., Detroit, has selected the Charles A. Mason Advertising Agency, of Detroit, to direct the advertising of its summer shoe cleaner.

Issue Label Warning

A bulletin mailed recently by the National Association of Exter-

Machine-Made
DEODORANT
CAKES and BLOCKS
are big sellers!



Make your deodorant and moth cakes with this heavy pressure foot press by the cold process and save money while you are increasing sales. A smooth, even cake will sell better because of its improved appearance and will cost less to make because this press not only cuts labor but saves 5% of your raw material. Why not let us make some sample cakes with your own para, naphthalene, etc., and submit complete information regarding cost and manufacturing process?

HOUCHIN MACHINERY CO., INC.
HAWTHORNE, N. J.

KOPPERS WHITE TAR — MOTH PREVENTION PRODUCTS

DISINFECTANTS

COAL TAR DISINFECTANTS—Coefficients 2 to 20 plus F.D.A. Method

•

PINE OIL DISINFECTANTS

•

CRESOL AND CRESYLIC ACID DISINFECTANTS

•

PINE OIL DEODORANTS

•

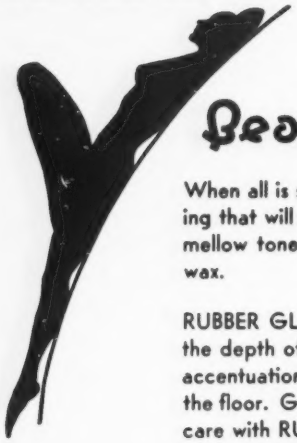
CRYSTAL AND BLOCK DEODORANTS

•

LIQUID INSECTICIDES

THE WHITE TAR COMPANY OF NEW JERSEY, INC.
PHONE KEARNY 2-3600
BELLEVILLE PIKE, KEARNY, N. J.

NATIONAL ASSOCIATION OF INSECTICIDE DISINFECTANT MANUFACTURERS



Beautifies—

When all is said and done, there is nothing that will give a floor the same deep, mellow tones—the same rich beauty as wax.

RUBBER GLOSS floor wax is noted for the depth of its lustre and its marvelous accentuation of the color and pattern of the floor. Give your floors a few months' care with RUBBER GLOSS wax and you will experience the keen delight of seeing their beauty fully displayed.

. . . RUBBER GLOSS wax actually costs less to use than other waxes. Won't you telephone our local representative?

FRANKLIN RESEARCH COMPANY
5134 Lancaster Avenue
PHILADELPHIA, PA.

Distributors in principal cities

POISON GRAINS

Effective and Economical Exterminators of Mice

Mixed Poison Grains
or
Poison Canary Seed

	Prices		Prices
10 lbs.	$4.00	50 lbs.	$12.00
25 lbs.	7.00	100 lbs.	22.00

Freight Prepaid

PHOSPHORUS PASTE FOR PESTS

A standardized Rat and Roach Paste sold in bulk to the trade.

	Prices		Prices
10 lbs.	$4.25	50 lbs.	$17.00
25 lbs.	9.00	100 lbs.	32.50

Freight Prepaid

SENNEWALD DRUG COMPANY, Inc.
800 Hickory Street — St. Louis, Mo.

minators & Fumigators calls attention to certain federal, state and city laws regarding labeling and marking of containers containing drugs, chemicals, etc. The laws differ in various localities, the New York State Board of Pharmacy for instance holding that fluorine products must carry the "Poison" label regardless of any existing city ordinance that might declare otherwise. It is urged that exterminators marketing products of this type check up with the association as to proper labeling. The bulletin also calls attention to the fact that in New York City all weights, measures, balances, etc. used in measuring articles intended for sale must be tested, sealed and marked by an inspector of the bureau of weights and measures.

Donate Golf Prizes

Prizes for the golf tournament held Sunday, June 7 at the Bob O'Link Course near Chicago, in connection with the mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers at the Edgewater Beach Hotel were donated by a group of associate member firms. The complete list of prize donators as announced by A. L. van Ameringen, chairman of the entertainment committee, was as follows: Barrett Co.; Breuer Electric Mfg. Co.; Continental Can Co.; Federal Varnish Co.; Givaudan-Delawanna, Inc.; Hudson Mfg. Co.; MacNair-Dorland Co.; National Can Co.; S. B. Penick & Co.; John Powell & Co.; R. J. Prentiss Co.; Sherwood Petroleum Co.; L. Sonneborn Sons; Van Ameringen-Haebler, Inc.; and Wilson & Bennett Mfg. Co.

Organize Sanitary Supply Firm

Azuria Chemical Co. has been incorporated in Akron, O., to manufacture and sell sanitary specialties, disinfectants, insecticides, polishes, waxes, etc. L. D. Carter, former Akron postmaster, is president, Theo. Kaleff, vice-president and general manager, W. E. Jackson, secretary and sales manager, and R. E. Waldo, treasurer.

Sanitary Supply Assn. Meets

THE annual meeting of the National Sanitary Supply Association was held in the Hotel New Yorker, New York, June 3, 4 and 5, with Ellis Davidson of Ellis Davidson Co., New York, president of the association, presiding at the business sessions. The meeting got under way just as this issue of SOAP went to press, and on the basis of advance reservations it was indicated that there would be a large attendance at the three-day session. The entertainment program included a stag dinner the evening of June 3rd at a Harlem club and the annual banquet the evening of June 4th held at the French Casino. An entire block of tables was reserved for the convention group at this well-known New York night club.

Ellis Davidson

The business program included a series of short talks on matters of practical importance to members of the sanitary supply industry. Speakers were selected, not from the outside, but from the industry itself. Among the talks scheduled for the various business sessions were the following:

"Our experience in Handling Salesmen," by Louis Herzog, Riddiford Brothers, Inc., Chicago.

"The Selling of Floor Finishes by the Janitor Supply Salesman," by M. J. Flanagan, Federal Varnish Co., Chicago.

"How the Dealer Can Handle Toilet Paper at a Profit," by Herbert Thwaite, Victoria Paper Mills Co., Fulton, N. Y.

"How the Dealer Can Build up a Profitable Paper Cup Business," by G. A. Breschel, Herz Cup Co., New York.

"The Direct Mail Advertising of Sanitary Supplies," by Joseph Fuld, Fuld Brothers, Inc., Baltimore.

"Points to Remember in Merchandising," by C. C. Childress, Amiglaze Sales Co., New York.

"Helping the Manufacturer's Salesman Help You," by Simon S. Selig, The Selig Co., Atlanta.

"Metal, Furniture and Automobile Polishes," by Dr. Foster Dee Snell, Foster D. Snell, Inc., Bk'lyn.

"How to Buy and How to Sell Floor Treatments," by Marshall L. Magee, T. F. Washburn Co., Chicago.

"Mops Offer Opportunities to Build Business, Profits and Good Will," by Arthur E. Jerome, Southern Mills Corp., New York.

"Recent Developments in Pyrethrum," by Harold Noble, S. B. Penick & Co., New York.

"New Types of Insecticide," by Russell B. Stoddard, R. J. Prentiss & Co., New York.

"How the Jobber Can Sell More Swinging Type Waste Receptacles," by Irving Klein, United Metal Box Co., Brooklyn.

"Increasing Your Sales on Sanitary Metalware," by Samuel Monroe, A. Kreamer, Inc., Brooklyn.

"History of Sanitation and the Proposed Modification of Peet-Grady Technique," by Wm. J. Anderson, New York.

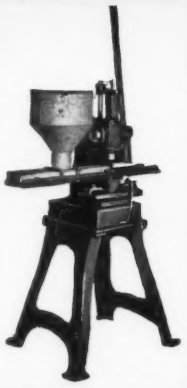
A supply show was held in connection with the meeting, with many interesting exhibits showing the latest developments in the sanitary supply field. Among the booths was one equipped with a complete Peet-Grady test chamber. This was shown in operation during the meeting and many samples were tested for various insecticide firms represented at the meeting.

for low cost *in* para block *manufacture*

These two practical machines are all you need to produce high quality para blocks or cakes. The small machine will thoroughly mix all ingredients. The large machine will compress the mixture into any shape dies can give.

In addition, the mixer can be used on other dry products such as roach powder, cleansers, bath salts, etc. It will also give a smooth, soft and velvety texture to creams.

The hand lever press has more power than cheap foot presses. Inexperienced operators can rapidly turn out fine looking blocks. Send us some of your material and let us show you some specimen cakes. The press will save from 10% to 20% over the hot process.



HUBER MACHINE CO., 265 46th St., Brooklyn, N. Y.

Makers of Good Soap Machinery for Forty Years

THIS Getz Em!

A HANDY BLOWER that can be used in all positions saving powder and getting into the spots where powder KILLS all roaches and insects.

. . . . *boost your*

DISINFECTANT COEFFICIENTS

by improved dispersion,—especially of high-test disinfectants,—by passing them through

Gaulin

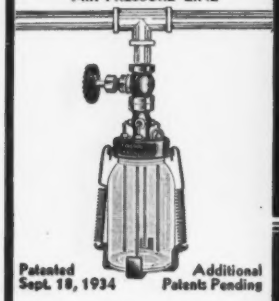
The GAULIN two-stage HOMOGENIZER

By better dispersion,—complete and uniform dispersion of the coal-tar acids,—you can produce a better disinfectant from the same raw materials. We are informed by a manufacturer who has used one of our HOMOGENIZERS for some years, that passing a disinfectant through the equipment boosts the phenol coefficient. Send us a sample of your product and let us show you how we can improve it with this machine.

Also for producing better floor waxes, polishes, and other emulsions,—wax or oil.

MANTON-GAULIN MFG. CO.
19 Charlton St. Everett, Mass.

FUMERAL PRESSURE SYSTEM CONNECTS TO STEAM OR AIR PRESSURE LINE



Patented Sept. 18, 1934 — Additional Patents Pending

FUMERAL PRESSURE SYSTEM

Does a Thorough Job..... INEXPENSIVE — EFFICIENT — ECONOMICAL

● The effectiveness of any good spray solution depends upon the efficiency of your spray equipment. Wet sprays are not efficient. It takes a minimum of 30 lbs. (steam or air pressure) to diffuse spray solutions. THE FUMERAL INSTANT DIFFUSER instantly charges the entire room. No insects, flies, cockroaches, ants, moths or germs have a chance to escape. ● Connects to any steam or air line. Turn on the valve and in 4 minutes the operation is completed. No electricity to fuss with. No moving parts. Nothing to get out of order. FUMERALS stay sold. Simple — Inexpensive — More Efficient and Most Economical. Anyone can install it. Various brands of insecticides, germicides, bactericides, deodorants, disinfectants and perfumes all work well in the FUMERAL INSTANT DIFFUSER.

FUMERAL

REGISTERED TRADE-MARK

FUMERAL COMPANY, RACINE, WIS.
Manufacturers of Stationary and Portable Diffusers
Sanitary Consulting Engineers

R. I. Trademark Bill

A bill which would compel registration of all trademarks has just been introduced in the Rhode Island State Senate under No. 134. It provides that no proceedings to prevent infringement can be instituted in the courts of the state unless the trademark or label is registered and a fee paid.

New Floor Finish

Federal Varnish Co., Chicago, is now introducing a new type floor finish that can be applied with either cloth, mop or brush and that will dry in one hour. The new finish is being demonstrated at the meeting of the Insecticide and Disinfectant Manufacturers at Chicago.

Sanitary Party June 16

The usual routine of business was followed by the Associated Sanitary Supply Distributors of Chicago at their May 12th meeting. The last meeting until next fall will be held June 16th. Plans are underway to have a party the night of the June meeting, but at this time the plans are not far enough along to be announced.

Amer. Can Executive Changes

W. H. Phelps, former president of American Can Co., was elected chairman of the board at a directors' meeting May 5. Mr. Phelps succeeds the late F. S. Wheeler. C. E. Green, former vice-president and comptroller, was elected president, and W. O. Starr, formerly auditor, is now comptroller.

Foreign Trade Opportunities

The following inquiries of interest to readers of SOAP have recently been received by the Foreign Trade Opportunity division of the U. S. Department of Foreign & Domestic Commerce, Washington, D. C. Concerns interested in having further particulars about any particular inquiry should address the bureau, mentioning the inquiry number. 683—Insecticides, disinfectants, etc. Costa Rica—Agency desired. 684—Toilet soaps—Egypt—agency desired. 685—Toilet and shaving soaps—Egypt purchase and agency. 722—Disinfectants—Cuba—agency.

Kleenwell Combustion

Chicago Sanitary Products Co., Chicago, is promoting a combination deal on their Kleenwell Cream Furniture Polish and Kleenwell Green Soap. The special introductory offer is good for a limited time only.

Korite Moves Office

Korite, Inc., makers of insecticides, disinfectants, metal polishes, liquid soaps, etc., formerly located at 6 Thacher St., Boston, moved last month to new offices at 80 Fountain St., Pawtucket, R. I. At the new location they occupy a modern fireproof building and have additional floor space available for expansion.

To Sell "Sunny Sol"

Sunny Sol Central Corp. has been formed by L. P. Stone at 260 East Naghten St., Columbus, Ohio, to manufacture and distribute "Sunny Sol" under franchise from the John Wiley Jones Co., Leroy, N. Y.

New Toledo Firm

Hauser Chemical & Supply Co., cleaners' supplies, has just been organized at 1621 Canton St., Toledo, Ohio. V. H. Kellermeyer is purchasing agent of the new concern.

To Make Insecticides

Atlas Chemical Co. has been formed in Detroit by Herman A. McLellan to manufacture insecticides and cleaners. Offices are at 627 West Canfield St.

Crossetti Moves Office

A. Crosetti & Bro. Co., San Francisco, janitors' supplies, moved recently to new quarters at 620 Washington St.

Report on Whale Catch

Final reports have now been received from all of the whaling expeditions in the Antarctic. The 24 expeditions had a total quota of 2,370,400 barrels, while 2,326,500 barrels, or about 2 per cent, less than the quota, were produced. Most of the season's catch has already been sold at prices ranging from $80 to $100 per ton. About 30,000 tons have not been disposed of, however.

New Household Cleaner

A new firm has been organized by John B. Suddarth in Detroit to manufacture a household cleaner under the name "Osco." Offices are located at 15734 Dexter Blvd.

Advertise "Jiffo" Polish

A newspaper advertising campaign on "Jiffo" furniture polish, has just been released through Dameron-Reynes, Inc., New York advertising agents.

Pittsburgh Concern Moves

The Call Again Washing Compound Co., formerly located at 1216 Federal St., Pittsburgh, has just moved to new quarters at 831 S. Canal St.

Form Try-It Co.

James Kanth has organized Try-It Co. at 2955 Blaine Ave., Detroit, to manufacture a new metal polish and window cleaner.

Moonshine Chemical Moves

Moonshine Chemical Co., Pittsburgh, cleaning compounds and household insecticides, has recently occupied new quarters at 3939 Butler Street.

Supply House Moves

Air-F-Low Institute, Seattle sanitary supply house, has just moved from the Shafer Bldg. to new quarters at 1814 Boren St.

Raises Soy Bean Oil Duty

To check heavy imports of soy bean oil into the United Kingdom, the British Government has doubled the duty, which is now 20 per cent ad valorem. The duty on cake and meal, safflower seed and sunflower seed oils has also been raised.

Special Offerings of

New and Rebuilt

SOAP MACHINERY

by

NEWMAN

We carry a complete line of equipment for the soap and sanitary products industry. All used equipment is rebuilt in our own shops and is guaranteed to be in first class condition. All new equipment that we manufacture such as crutchers, frames and cutting tables is of the finest material and workmanship. You can buy with confidence from Newman.

USED SPECIALS

For the Soap, Chemical, Cosmetic and Allied Trades

H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.

Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.

Ralston Automatic Soap Presses.

Scouring Soap Presses.

Empire State, Dopp & Crosby Foot Presses.

2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.

H-A 4 and 5 roll Steel Mills.

H-A Automatic and Hand-Power slabbers.

Steel Roll Mills, water-cooled, for making thin, polished soap flakes.

Blanchard No. 10-A and No. 14 Soap Powder Mills.

J. H. Day Jaw Soap Crusher.

H-A 6, 8 and 10 inch Single Screw Plodders.

Allbright-Nell 10 inch Plodders.

Filling and Weighing Machine for Flakes, Powders, etc.

Steel Soap frames, all sizes.

Steam Jacketed Soap Remelters.

Automatic Soap Wrapping Machines.

Glycerin Evaporators, Pumps.

Proctor & Schwartz large roll Soap Chip Dryers complete.

Perrin 18 inch Filter Press with Jacketed Plates.

Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.

Day Grinding and Sifting Machinery.

Schultz-O'Neill Mills.

Day Pony Mixers.

Gardiner Sifter and Mixer.

Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.

Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.

Day Talcum Powder Mixers.

All types and sizes—Tanks and Kettles.

Ralston and H.A. Automatic Cutting Tables.

Soap Dies for Foot and Automatic Presses.

Broughton Soap Powder Mixers.

Williams Crutcher and Pulverizer.

National Filling and Weighing Machines.

Plant of the Holman Soap Co., Chicago, is offered for sale. Completely equipped modern factory.

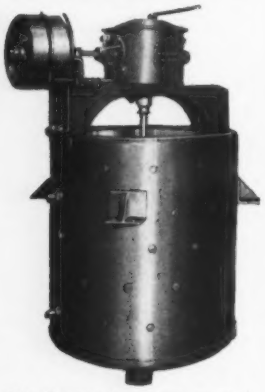
Send us a list of your surplus equipment we buy separate units or complete plants.

Newman Tallow & Soap Machinery Co.

1051 W. 35th St., Chicago, Illinois

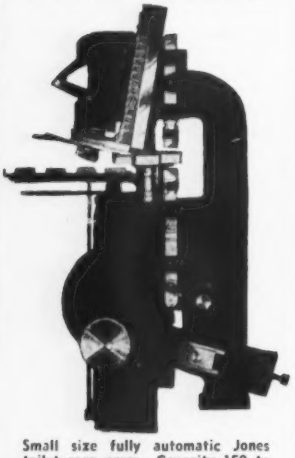
Our forty years soap experience can help solve your problems.

New CRUTCHERS



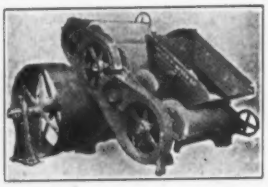
This Newman brand new, all steel, steam jacketed soap crutcher will crutch any kind of soap. We also build another crutcher especially adapted for laundry soap.

Automatic JONES PRESS



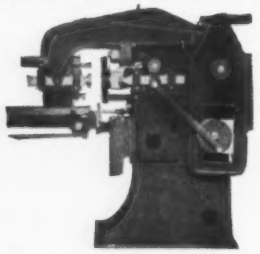
Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our shops.

H-A SOAP MILL



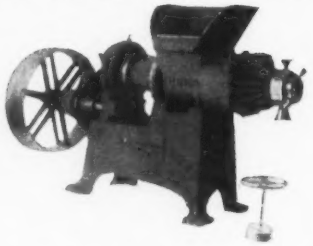
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls. Priced for quick sale.

JONES AUTOMATIC



4 Jones Automatic combination laundry and toilet soap presses. All complete and in perfect condition.

SINGLE SCREW SOAP PLODDER



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Superintendent; man with twelve years' experience with two large soap manufacturers desires to make new connection. Present employment dates back seven years. Especially qualified to superintend production of all types of toilet soaps. Address Box No. 754, care *Soap*.

Soap Sales—Man with many years' experience in sale of soaps in N. Y. Metropolitan area desires to represent Eastern manufacturers of toilet, laundry and flake soaps. Commission basis. Well-known among jobbers, chain buyers, etc. Address Box 756, care *Soap*.

Capable Sanitary Chemical Specialist—15 years' experience manufacturing disinfectants, insecticides, soaps, polishes, deodorants, etc., desires position as superintendent or chemist. Temporary work will be considered. Single, age 42, college graduate. Available at once. Address Box No. 759, care *Soap*.

Can you use purchasing experience in your company? Employed. Have been with same organization ten years, buying raw materials, including vegetable oils. Young married man, college training. Let's talk it over if you are interested. Address Box No. 762, care *Soap*.

Floor Waxes—Chemist, expert in manufacture of floor waxes,—also have much research data,—open for part or full-time work with manufacturer. Can handle all emulsion and emulsification problems. Address Box 755, care *Soap*.

Soapmaker and Chemist—with long experience making all kinds of soaps, seeks permanent connection. Address Box No. 758, care *Soap*.

Positions Open

Wanted: Middlewest manufacturer is interested in employing a chemist who has had experience in manufacture of polishes, soaps, disinfectants, de-

REBUILT SOAP MACHINERY

SPECIALS

Machinery from former plants of National Soap Powder Co., A. W. Barnes Soap Co., and Pennsylvania Soap Co.

1—Allbright-Nell 4'x8' Cooling Roll, with top feeder roll, scraping knife.
4—5000 lb., 1500 lb., 1000 lb., Jacketed Vertical Crutchers.
2—1500 lb. Horizontal Crutchers.
1—Steel Soap Kettle, 5' dia. x 10' high.
1—Houchin 400 lb. Amalgamator.
4—Houchin Soap Plodders, 8" and 10".
2—Rucchmann 4-roll inclined Granite Mills, 18"x24", motor driven.
1—Broughton 1200 lb. Soap Powder Mixer.
2—Tabor Soap Pumps.
4—Houchin 4 and 6-knife Chippers, 20".
1—Houchin Soap Foot Press.
1—Houchin 1500 lb. Power Slabber.
1—Houchin Hand Slabber.
2—Houchin 2-way Soap Cutting Tables.
1—Jones "A" Automatic Soap Press.

1—Proctor and Schwartz Soap Chip Dryer, steel frame, 7-section, 1—cooling section, complete with 5-roll P. & S. Mill. Located on Pacific Coast.

MISCELLANEOUS—Soap Frames, Kettles, Mixers, Pony Mixers, Powder Fillers, Labelers, Wrappers, Tanks, Pumps, Boilers, etc.

Send for Latest Bulletin.

CONSOLIDATED PRODUCTS CO., INC.
15-21 Park Row New York, N. Y.
BArclay 7-0600

We buy your idle Machinery—Send us a list.

Complete Soap Plant

of large, old, established eastern manufacturer of national reputation. Includes modern plant and all late type equipment. Produced bar and chip laundry soaps, toilet soap and soap powders. Write for full details.

REBUILT SPECIAL OFFERINGS

1—Chilling Roll Unit 4' x 7'.
1—Jones Automatic Pin Die Press.
2—Houchin-Aiken Empire State Foot Presses.
1—2 way Soap Cutting Table.
10—100 Lb. Soap Frames.
20—1200 Lb. Soap Frames.
1—10A Blanchard Mill.
1—65 Gal. Dopp Jacketed Kettle.
1—Soap Chipper.
4—Filter Presses—10" to 24" Square.
2—Jacketed Vertical Crutchers.
2—Vertical Jacketed 3000 Lb. Kettles.
6—Glass Lined Kettles, 50 to 3000 Gals.
1—Soap Slabber.
1—Proctor 4 Fan Soap Chip Dryer.
3—Plodders; 6", 10" and 12".
1—3 and 4 Roll Stone Mills.

Send for Bulletin No. 101 *giving full listings*

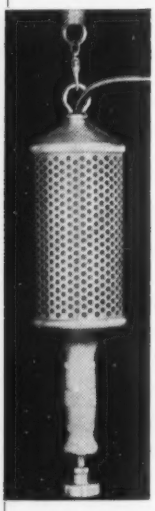
We Buy Your Surplus Equipment for Cash, From Single Items to Complete Plants.

STEIN EQUIPMENT CORP.

126 BROOME STREET NEW YORK, N. Y.
Phone: CAnal 6-8117 Cable Address "MACHINEQUIP"

IF YOUR PRODUCT IS:

VOLATILE · OILY · AFFECTED BY AIR OR MOISTURE · CHEMICALLY ACTIVE · STICKY



THEN YOU SHOULD USE

the *Whirlwind*

(PATENTED)

PORTABLE ELECTRIC SCREW CAPPER

TO INSURE A PERFECT SEAL ON ALL CONTAINERS from PERFUME VIALS to COLD CREAM JARS. HANDLES ALL CAPS, MOLDED or METALLIC, up to 89 mm. including Amerseal and Duplex Caps. SPEED FROM 50 to 100 CAPS PER MINUTE!

FREE TRIAL

WRITE FOR OUR FREE TRIAL OFFER, *NOW*.

Jobbers, Agents, Dealers; Investigate!

SCIENTIFIC FILTER CO.

2 FRANKLIN SQUARE NEW YORK CITY

SPECIALTY SOAP PRODUCTS

Liquid Soap Base
Potash Oil Soap
Liquid Soap
U. S. P. Green Soap
Auto Soaps
Shampoo
Pine Oil Soap
Shampoo Base
U. S. P. Cresol Compound
Coal Tar Disinfectants
Pine Oil Disinfectants
Insecticides
Liquid Floor Wax

We manufacture for the trade only

HARLEY SOAP CO.,
2852 E. Pacific St.,
Philadelphia, Pa.

Ask for samples of above specialty bulk products.

PALMER DISPENSERS

The new "TIPOWDER" dispenser (at right) is positive in operation, no springs or mechanical parts to get out of order. Tilting dispenser delivers predetermined quantity of soap—wasteful continuous flow absolutely impossible. Tamper-proof, easily cleaned. Metal parts chrome plated—black china, opal or clear crystal glass bowl.

Palmer SUPER-SERVER (left)—priced low, has no equal in value. Metal parts of stainless chrome alloy. One piece bracket in satin chrome-like finish. Valve parts easily removed for cleaning or replacement. Crystal glass decagon bowl, black enameled cap. Large 1-inch opening makes filling easy. Lowest priced push-in dispenser—yet neat, compact, durable.

Palmer PRODUCTS INC
WAUKESHA, WIS.
Adjacent to Milwaukee

Write for new catalog on complete Palmer line of soap dispensers; janitor and sanitary supplies, maintenance materials and equipment.

F. & S.

Quality Colors
for
TOILET SOAPS
LIQUID SOAPS

TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.
205 FULTON STREET
NEW YORK, N Y.

Import—Manufacture—Export

odorants, insecticides, etc. Give details of experience and salary expected. Address Box No. 752, care *Soap*.

A Prominent Manufacturer of liquid soaps, disinfectants, deodorizing cakes, etc., has an opening for a dependable sales representative. Address Box No. 760, care *Soap*.

Wanted: Soap maker capable of manufacturing quality laundry soap and willing to invest $3,000 in plant that is ready to operate. No other factory within 500 miles. Address P. O. Box 31, El Paso, Texas.

Miscellaneous

Large manufacturer of chemical specialties, recognized achievements in this field, located in East, modern plant and laboratory, wishes connection with jobbers, selling agencies or large consumers who desire to purchase all types of floor waxes, furniture polishes, auto polishes and other specialties on equitable cost-plus basis. Address Box No. 764, care *Soap*.

Volcanic Ash—Mined and refined by Mid-Co Products Co., 238 Railway Exchange Building, Kansas City, Mo., operators of plants in Oklahoma and Kansas. Samples and prices on carlots on request.

Distributors—We are manufacturers of metal, silver, stove, furniture polishes and no-rub wax. Also complete line of Bar Room cleaning materials. These can be supplied in bulk or packaged under our or your own label which we supply. The Slick-Shine Co., Inc., Newark, N. J.

Wanted: Formulae and processes for manufacture of no-rubbing wax, paste wax, and liquid wax. Please submit samples and full particulars. Address Box No. 763, care *Soap*.

Floor Brushes — We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Have you trouble with soap? Expert soap man will help you; any kind of soap: household, toilet, shaving, liquid, powder, paste, oil soap. Also analyses. Formulate new ideas. Address Box No. 283, Boonton, New Jersey.

Portable Geared Drive Mixer. Models also available in direct drive for lighter fluids. Both models offered in a variety of sizes and speeds.

Angular Off-Center Agitator for fixed large tank installation. Sizes from 2 to 50 H.P. and larger.

MIXERS FOR

1. Blending perfume oils.
2. Converting soap base into shampoo and liquid soap.
3. Manufacture of liquid household insecticides (blending pyrethrum extracts, perfume oils and petroleum distillate).
4. Manufacture of stable disinfectant emulsions.
5. Mixing liquid polishes of all kinds.
6. Manufacturing liquid cleaning preparations.

"Lightnin" Double Mixing action completely eliminates dead spots—Write for Catalog.

MIXING EQUIPMENT COMPANY, INC.
1050 Garson Avenue **Rochester, N. Y.**

Representatives in all principal cities
New York Office—368 Broadway

REBUILT
SOAP MACHINERY

PRICED FOR QUICK SALE

1—Proctor Soap Chip Dryer
1—Jones automatic vertical Soap Press
4—3, 4 and 5 roll Steel Mills
2—10″ Houchin-Aiken Plodders
1—Automatic Power Cutting Table
1—Broughton Mixer, jacketed
2—No. 10A Blanchard Mills
3—Soap Foot Presses
6—Filter Presses, sizes 12″ to 30″
1—Granite Stone Mill, 2 roll
30—1200 lb. Soap Frames
2—Jacketed Vertical Crutchers
2—1500 lb. Horizontal Crutchers
2—Hand Power Slabbers
2—Hand Power Cutting Tables
2—Houchin Chippers

600 and 1,200 lb. Frames, Kettles, Pumps, Tanks, Filter Presses, Wrapping Machines, Tube Fillers, Closers, Crimpers, Dry Powder Mixers, Pulverizers, Grinders, Evaporators, Amalgamators, Mixers, etc.

Send for Complete List (Bulletin No. 16)

WE BUY AND SELL FROM SINGLE ITEMS TO COMPLETE PLANTS.

STEIN-BRILL CORPORATION

183 VARICK STREET **NEW YORK, N. Y.**
Phone: WAlker 5-6892-3-4
Cable Address: "BRISTEN"

Schools Are Buying! Bobrick's No. 10 and 12 SOP-O-ZON Dispensers

Are Especially Designed for Schools

No. 10 Holds 16 oz. 500 Washings
No. 12 Holds 40 oz 1250 Washings

Are you ready for this business? Better put in a stock and see that your salesmen show samples. Also proven the most practical designs for Resorts, Factories, Jails, Shops, Railroads, Service Stations, Bus Terminals and Offices.

INDESTRUCTIBLE!

Made of heavy pressed steel; cap and valve of non-corrosive metal, chromium plated . . nothing to break, come loose, or wear out. Last indefinitely. Easy to install, fill and keep clean. Cannot leak. Neither dispenser nor soap can be removed. Write for FREE catalogue describing entire line of 35 models and distributor's prices.

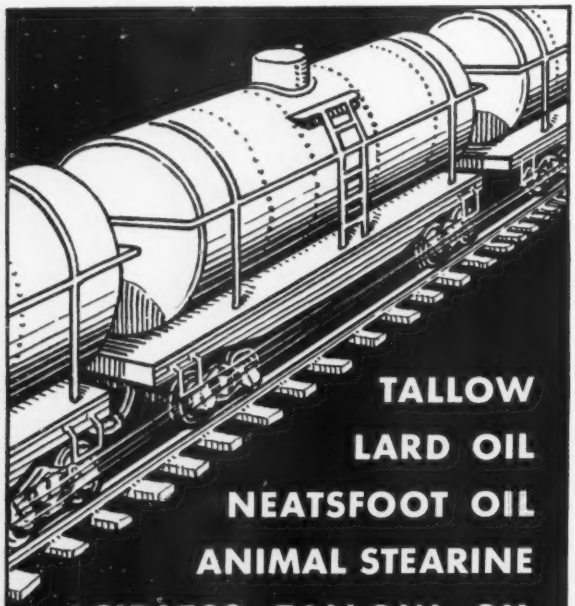
Bobrick Manufacturing Corporation
Manufacturers of Soap Dispensers For Over 30 Years
Serving The Soap Manufacturer and Jobber ONLY
111-117 SO. GAREY ST., LOS ANGELES, CALIF.
215 FOURTH AVE., NEW YORK CITY

FOR SALE

Motors
Large Trough complete with Agitator and Cover
Hair Pomade Steam Jacketed Tank with Agitator
Filling Machine
Electric Fans
Time Clock
Alsop Mixing Tank with Agitator
Raw Materials
Powder Mixers
Powder Sifters
Powder Filling Machine
Caustics
Glycerine
Bottles
Jars
Cartons
Liquid Soap Machine
Soap Crutcher
Soap Frames
Chain Hoists
Tanks
Scales
Reed Mixers
Laboratory Equipment
Soap Trays
Alsop Filters
High Pressure Boiler with Oil Burner
Soap Slabbers
Soap Cutting Tables
Soap Press
Jacketed Cream Mixers
Lye Tanks
Insecticide Tanks
Dyes
Steam Jacketed Kettles
Dual Electric Pumps
Tables
Shelves
Office Equipment

The above equipment has had very little use. Must be sacrificed to quick buyer.

EARLE SOAP MFG. CO.
309 N. EUTAW ST. BALTIMORE, MD.



TALLOW
LARD OIL
NEATSFOOT OIL
ANIMAL STEARINE
ACIDLESS TALLOW OIL

Prompt Delivery—Drums, Barrels, or Tank Cars.

INDEPENDENT MANUFACTURING CO.
Bridesburg P. O. Philadelphia, Pa.

High cost of Lavender and the Fine Quality of our product has won many fine friends for

Lavender L Parento

at $4 per lb.

Write for your sample to - day

Compagnie Parento, Inc.
CROTON-ON-HUDSON, N. Y.
NEW YORK CITY DETROIT CHICAGO
LOS ANGELES SAN FRANCISCO
SEATTLE PORTLAND, ORE. TORONTO

Chicago Perf. Ass'n Plans

Chicago Perfumery, Soap and Extract Association met at the Lake Shore Athletic Club May 5th. J. H. Helfrich, chairman of the legislative committee, made a detailed report concerning legislative matters of interest to the industry. Plans for golf tournaments this summer were announced.

Soap Employment Stable

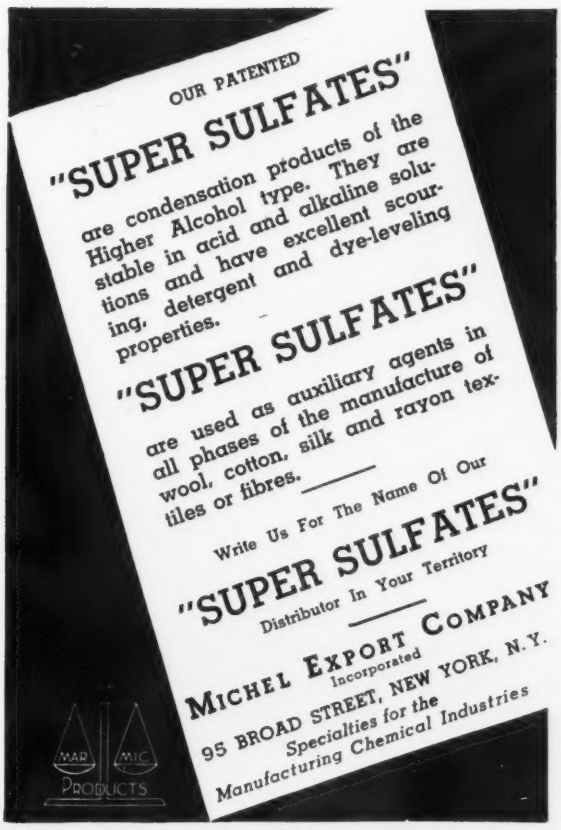
The index of employment in the soap industry, as reported by the U. S. Department of Labor, stood at 96.4 in March, 1936, the same figure registered for the previous month. This compares with 103.3 for March, 1935, and a 1923-25 average figure of 100. The pay-roll index registered 95.0 in March, 1936, as compared with 94.5 in February and 95.9 for March, 1935.

Colgate Offers Nail Brush

A nail brush valued at $1.00 is currently being featured in a premium offer made by Colgate-Palmolive-Peet Co. It is given for ten cents in coin accompanied by either two box tops from the ten cent package of "Super Suds" or one from the larger twenty-cent size.

Champion Chemical Moves

Champion Chemical Works, formerly at 455 E. So. Water St., Chicago, is now at 43 E. Ohio St.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for the Manufacture of Soaps and Sanitary Products

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Columbia Alkali Co.
T. G. Cooper & Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Mathieson Alkali Works, Inc.
Niagara Alkali Co.
H. H. Rosenthal Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

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American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer, Inc.
E. I. du Pont de Nemours & Co.
Felton Chemical Co.
Firmenich & Co.
Charles Fischbeck & Co.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Merck & Co.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Riviera Products Co.
Schimmel & Co.
George Silver Import Co.
Solvay Sales Corp.
A. M. Todd Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

BULK AND PRIVATE BRAND PRODUCTS

Baird & McGuire, Inc.
Chemical Supply Co.
Clifton Chemical Co.
Davies-Young Soap Co.
Eagle Soap Corp.
Federal Varnish Co.
Flori Mothproofing Method
Franklin Research Co.
Fuld Bros.
E. A. Gerlach Co.
Harley Soap Co.
Koppers Products Co.
Kranich Soap Co.
Palmer Products
Philadelphia Quartz Co.
John Powell & Co.
Geo. A. Schmidt & Co.
Uncle Sam Chemical Co.
T. F. Washburn Co.
White Tar Co.
Windsor Wax Co.

CHEMICALS

American-British Chemical Supplies
Columbia Alkali Co.
T. G. Cooper & Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Grasselli Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Co.
Innis, Speiden & Co.
Jungman & Co.
Mathieson Alkali Works, Inc.
Mechling Bros. Chemical Co.
Merck & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
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Solvay Sales Corp.
Standard Silicate Co.
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Warner Chemical Co.
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Monsanto Chemical Co.
Reilly Tar & Chemical Co.
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Capstan Glass Co. (Bottles)
Continental Can Co. (Tin Cans)
General Can Co. (Cans)
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Maryland Glass Corp. (Bottles)
National Can Co. (Cans)
Salem Glass Works (Bottles)
Wilson & Bennett Mfg. Co. (Steel Pails and Drums)

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Fuld Bros.
Palmer Products, Inc.

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Dodge & Olcott Co.
P. R. Dreyer Inc.
Felton Chemical Co.
Firmenich & Co.
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Fritzsche Brothers, Inc.
Leghorn Trading Co.
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Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Riviera Products Co.
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RAW MATERIAL AND EQUIPMENT GUIDE

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Earle Soap Mfg. Co. (Used)
Eastern Engineering Co. (Portable Mixers)
Ertel Engineering Corp. (Filters, Mixers, Bottle Fillers)
Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
International Nickel Co. (Monel Metal)
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Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Scientific Filter Co. (Filters, Fillers)
Stokes & Smith Co. (Packing Machinery)
Western Precipitation Co. (Multiclones)

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.
Stein-Brill Co.
Stein Equipment Corp.

MISCELLANEOUS

American Colloid Co. (Bentonite)
Anchor Cap & Closure Corp. (Metal Caps)
T. G. Cooper & Co. (Waxes)
Dobbins Mfg. Co. (Pails, Mop Wringers, etc.)
General Chemical Co. (Fluorides)
General Naval Stores Co. (Pine Oil-Rosin)
Glyco Products Co. (Synthetic Waxes)
Hercules Powder Co. (Pine Oil and Rosin)
Industrial Chemical Sales Co. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants and Waxes)
Merck & Co. (Lanolin)
Pylam Products Co. (Lathering Agent)
Rohm & Haas Co. (Insecticide Base)
Sennewald Drug Co. (Rat and Roach Paste)

OILS AND FATS

T. G. Cooper & Co.
Eastern Industries
Independent Mfg. Co.
Industrial Chemical Sales Co.
Leghorn Trading Co.
Michel Export Co.
Murray Oil Products Co.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Wecoline Products Co.
Welch, Holme & Clark Co.

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Hooker Electrochemical Co.
Merck & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
H. H. Rosenthal Co.
Solvay Sales Corp.
Jos. Turner & Co.

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Dodge & Olcott Co.
P. R. Dreyer Inc.
Felton Chemical Corp.
Firmenich & Co.
Charles Fischbeck & Co.
Fritzsche Brothers, Inc.
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Magnus, Mabee & Reynard, Inc.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Riviera Products Co.
Schimmel & Co.
George Silver Import Co.
Ungerer & Co.
Van Ameringen-Haebler. Inc.

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Atlantic Refining Co.
O'Connor & Kremp
Sherwood Petroleum Co.
L. Sonneborn Sons.

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Insect Flowers and Powder, Pyrethrum Extract, Derris Products
Derris, Inc.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
Murray & Nickell Mfg. Co.
John Powell & Co.
H. H. Rosenthal Co.
Sherwood Petroleum Co.

SOAP DISPENSERS

Bobrick Mfg. Co.
Clifton Chemical Co.
Eagle Soap Corp.
Fuld Bros.
Palmer Products
Presto Mfg. Co.

SODIUM SILICATE

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Grasselli Chemical Co.
Mechling Bros. Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SPRAYERS

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Dobbins Mfg. Co.
Fumeral Co.
Getz Exterminators
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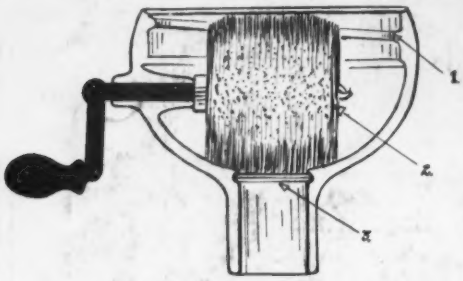

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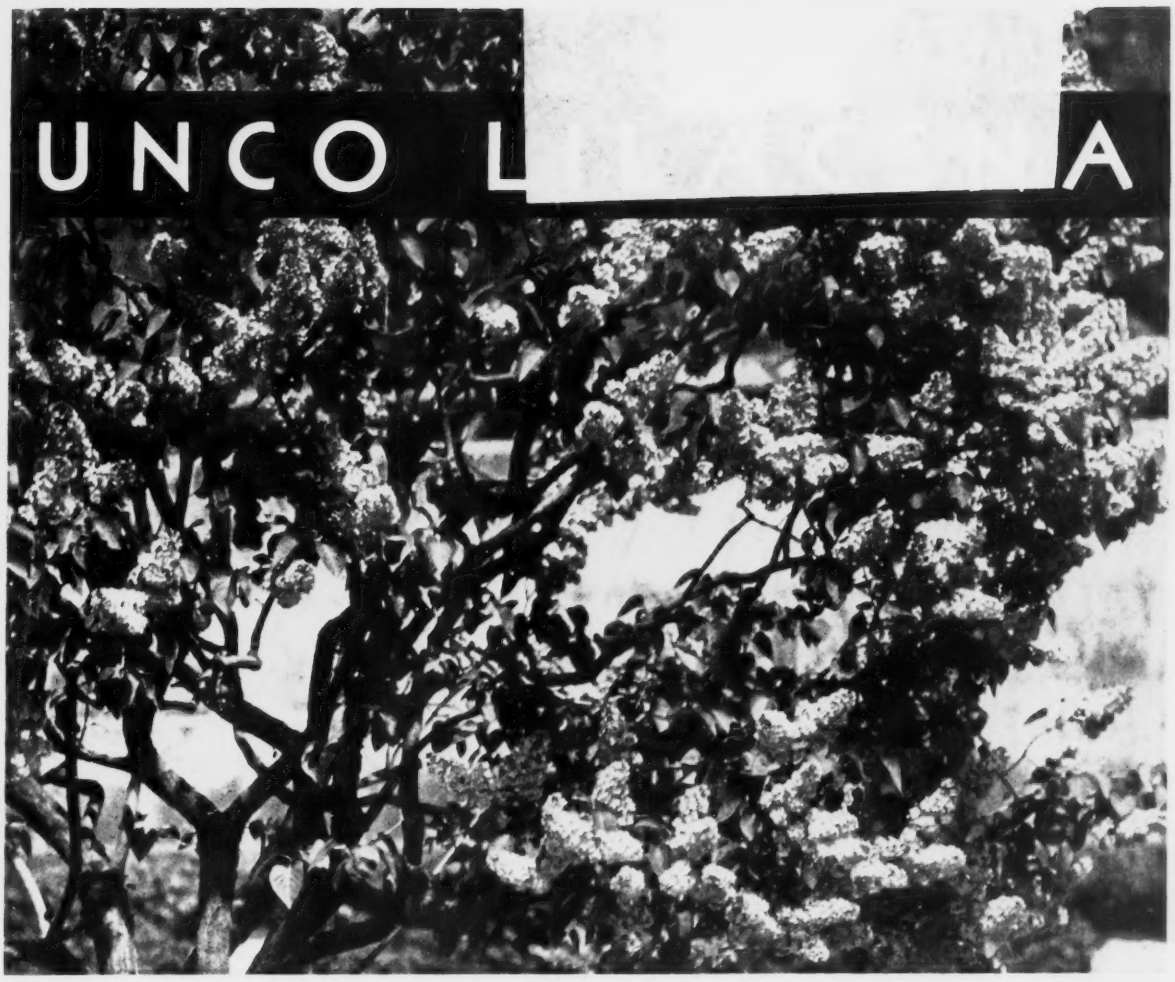

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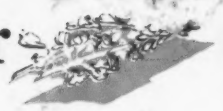

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DOW

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